SUPERIOR APPALACHIAN PIPELINE COMPANY

May 5, 2017

Director
WVDEP – Division of Air Quality
601 57th Street SE
Charleston, WV 25304

Tracking No. 7014 2120 0001 4786 6285

RE: Superior Appalachian Pipeline, LLC
Preston Compressor Station (Facility ID No. 077-00089, Permit No. G35-A044C)
G35-D Modification Application

To Whom It May Concern:

Superior Appalachian Pipeline, LLC (Superior) is submitting this G35-D Construction Application for the Preston Compressor Station, per WVDEP request to clarify source information regarding the facility.

The applicant is requesting that the issued G35-D permit reflect the source information contained within this permit application. Enclosed are one (1) original hard copy and two (2) CDs with PDFs of the application, along with a check for the application fee in the amount of $4,000. The affidavit of publication for the Class I Legal Advertisement will be forwarded upon receipt.

Superior appreciates your review of this submittal. Should you have any questions, please contact me at (918) 477-3942 or via email at jennifer.frazier@unitcorp.com.

Respectfully,

Jennifer Frazier
Environmental Specialist
Unit Corporation

Attachments

1000 Town Center Way Suite 120 Canonsburg, Pennsylvania 15317 724.746.6757 Fax 724.746.6744

PROJECT REPORT

Superior Appalachian Pipeline, LLC
Preston Compressor Station

G35-D Permit Application

SUPERIOR APPALACHIAN PIPELINE LLC

TRINITY CONSULTANTS
4500 Brooktree Drive
Suite 103
Wexford, PA 15090
(724) 935-2611

May 2017

Trinity Consultants

Environmental solutions delivered uncommonly well

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Superior Appalachian Pipeline, LLC (Superior) is submitting this G35-D Permit application to the West Virginia Department of Environmental Protection (WVDEP) for an existing natural gas compressor station located in Preston County, West Virginia (Preston Compressor Station or 'Preston Station'). The Preston Station is currently operating under G35 permit number G35-A044C. This general permit application is being submitted per WVDEP request to clarify source information regarding the facility.

1.1. FACILITY AND PROJECT DESCRIPTION

The Preston Station is an existing natural gas compressor station covered under standard industrial code (SIC) 1311. The station compresses and dehydrates natural gas from nearby wells for transportation across the pipeline.

The station currently consists of the following equipment:

- One (1) natural gas-fired compressor engine (CE-2A), rated at 425 bhp;
- One (1) natural gas-fired emergency generator engine (GE-1), rated at 93 bhp;
- One (1) 7 million standard cubic feet per day (MMscfd) triethylene glycol dehydration unit (RSV-1) with associated 0.2 MMBtu/hr reboiler (RBV-1A);
- Two (2) 8,820 gallon waste fluids tanks (T01 and T02); and
- Small exempt sources.

As previously indicated, with this submittal, the applicant is fulfilling WVDEP's request to clarify source information. The applicant is requesting that the issued G35-D permit reflect the source information contained within this permit application.

A process flow diagram is included as Attachment D.

1.2. SOURCE STATUS

WVDEP must make stationary source determinations on a case-by-case basis using the guidance under the Clean Air Act (CAA) and EPA's and WVDEP's implementing regulations. The definition of stationary source in 40 CFR 51.166(b) includes the following:

> *"(6) Building, structure, facility, or installation means all of the pollutant emitting activities which belong to the same industrial grouping, are located on or more contiguous or adjacent properties, and are under control of the same person (or persons under common control)."*

Other additional pollutant emitting facilities should be aggregated with the Preston Station for air permitting purposes if, and only if, all three elements of the "stationary source" definition above are fulfilled. There are no facilities within a quarter-mile radius of the facility; therefore, no facilities should be aggregated with the Preston Station for air permitting purposes.

1.3. G35-D APPLICATION ORGANIZATION

This West Virginia G35-D permit application is organized as follows:

- Section 2: Sample Emission Source Calculations;
- Section 3: Regulatory Discussion;
- Section 4: G35-D Application Form;
- Attachment A: Single Source Determination Form
- Attachment B: Siting Criteria Waiver *(not applicable)*
- Attachment C: Current Business Certificate
- Attachment D: Process Flow Diagram
- Attachment E: Process Description
- Attachment F: Plot Plan
- Attachment G: Area Map
- Attachment H: G35-D Section Applicability Form
- Attachment I: Emission Units/ERD Table
- Attachment J: Fugitive Emission Summary Sheet(s)
- Attachment K: Storage Vessels Data Sheet(s)
- Attachment L: Natural Gas Fired Fuel Burning Unit Data Sheet(s)
- Attachment M: Internal Combustion Engine Data Sheet(s)
- Attachment N: Tanker Truck Loading Data Sheet
- Attachment O: Glycol Dehydration Unit Data Sheet(s)
- Attachment P: Pneumatic Controller Data Sheet(s)
- Attachment Q: Centrifugal Compressor Data Sheet(s)
- Attachment R: Reciprocating Compressor Data Sheet(s)
- Attachment S: Blowdown and Pigging Operation Data Sheet(s)
- Attachment T: Air Pollution Control Device Data Sheet(s)
- Attachment U: Emission Calculations
- Attachment V: Facility-wide Emission Summary Sheet(s)
- Attachment W: Class I Legal Advertisement

2. SAMPLE EMISSION SOURCE CALCULATIONS

The characteristics of air emissions from the facility, along with the methodology for calculating emissions, are briefly described in this section of the application. Detailed emission calculations are presented in Attachment U of this application.

Emissions at this facility will result from combustion of natural gas (in the engines and reboilers), operation of the dehydration unit and storage tanks, as well as piping blowdowns and fugitive emissions from components leaks and the facility roadway. The methods by which emissions from each of these source types is calculated are summarized below.

- **Compressor Engine:** Potential emissions of nitrogen oxides (NO_X), CO, VOC, formaldehyde are calculated using factors provided by the engine and catalyst manufacturer. Potential emissions of sulfur dioxide (SO_2), particulate matter ($PM/PM_{10}/PM_{2.5}$), and all other hazardous air pollutants (HAPs) are calculated using U.S. EPA's AP-42 factors for four-stroke lean-burn engines.

- **Generator Engine:** Potential emissions of nitrogen oxides (NO_X), CO and VOC are calculated using factors provided in the EPA Certificate of Conformity (CO from the Test Data in the Summary Report, per previous permit engineer request). Potential emissions of sulfur dioxide (SO_2), particulate matter ($PM/PM_{10}/PM_{2.5}$), and all other hazardous air pollutants (HAPs) are calculated using U.S. EPA's AP-42 factors for four-stroke rich-burn engines.

- **TEG Dehydration Unit:** Potential emissions of hazardous air pollutants (HAPs), volatile organic compounds (VOC), and methane from the dehydration unit are calculated using GRI-GLYCalc v4.0 and a site-specific gas analysis.

- **Reboiler:** Potential emissions of all criteria pollutants and HAPs are calculated using U.S. EPA's AP-42 factors for natural gas external combustion equipment.[1] These calculations assume a site-specific heat content of natural gas.

- **Storage Tanks and Liquid Loading:** Working, breathing and flashing emissions of VOC and HAPs from the waste fluid tanks are calculated using E&P TANK v2.0 software. Working and breathing emissions from all other tanks, along with the waste fluid loading emissions, were calculated using EPA Tanks 4.0.9d and AP-42 methodology.

- **Fugitive Emissions:** Emissions from fugitive equipment leaks are calculated using published EPA emission factors and 40 CFR Part 98, Subpart W emission factors. Emissions from blowdown events are calculated using engineering estimates of the amount of gas vented. Site specific gas analyses were used to speciate VOC, HAP, and GHG emissions.

- **Haul Roads:** Fugitive dust emitted from facility roadways has been estimated using projected vehicle miles traveled along with U.S. EPA's AP-42 factors for unpaved haul roads.[2]

Potential emissions of greenhouse gas pollutants (GHGs) are calculated using manufacturer's data as available (CO_2 and CH_4 in this case) and U.S. EPA's emission factors from 40 CFR Part 98, Subpart C for all others.

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[1] U.S. EPA, AP 42, Fifth Edition, Volume I, Chapter 1.4, Natural Gas Combustion, July 1998.
[2] U.S. EPA, AP 42, Fifth Edition, Volume I, Section 13.2.2, Unpaved Roads, November 2006.

This section documents the applicability determinations made for Federal and State air quality regulations. In this section, applicability or non-applicability of the following regulatory programs is addressed:

- Prevention of Significant Deterioration (PSD) permitting;
- Non-attainment New Source Review (NNSR) permitting;
- Title V of the 1990 Clean Air Act Amendments;
- New Source Performance Standards (NSPS);
- National Emission Standards for Hazardous Air Pollutants (NESHAP); and
- West Virginia State Implementation Plan (SIP) regulations.

This review is presented to supplement and/or add clarification to the information provided in the WVDEP G35-D operating permit application forms.

In addition to providing a summary of applicable requirements, this section of the application also provides non-applicability determinations for certain regulations, allowing the WVDEP to confirm that identified regulations are not applicable to the facility. Note that explanations of non-applicability are limited to those regulations for which there may be some question of applicability specific to the operations at the station. Regulations that are categorically non-applicable are not discussed (e.g., NSPS Subpart J, Standards of Performance for Petroleum Refineries).

3.1. PSD AND NNSR SOURCE CLASSIFICATION

Federal construction permitting programs regulate new and modified sources of attainment pollutants under Prevention of Significant Deterioration and new and modified sources of non-attainment pollutants under Non-Attainment New Source Review. PSD regulations apply when a new source is constructed in which emissions exceed major source thresholds, an existing minor source undergoes a modification in which emission increases exceed PSD major source thresholds, or an existing major source undergoes a modification in which emission increases exceed PSD significant emission rates. No new emissions sources are being proposed in this application; therefore, PSD and NNSR regulations do not apply to this application.

3.2. TITLE V OPERATING PERMIT PROGRAM

Title 40 of the Code of Federal Regulations Part 70 (40 CFR 70) establishes the federal Title V operating permit program. West Virginia has incorporated the provisions of this federal program in its Title V operating permit program in West Virginia Code of State Regulations (CSR) 45-30. The major source thresholds with respect to the West Virginia Title V operating permit program regulations are 10 tons per year (tpy) of a single HAP, 25 tpy of any combination of HAP, and 100 tpy of all other regulated pollutants. The potential emissions of all regulated pollutants are below the corresponding threshold(s) at this facility. Therefore, the facility is not a major source for Title V purposes.

3.3. NEW SOURCE PERFORMANCE STANDARDS

New Source Performance Standards, located in 40 CFR 60, require new, modified, or reconstructed sources to control emissions to the level achievable by the best demonstrated technology as specified in the applicable provisions. Moreover, any source subject to an NSPS is also subject to the general provisions of NSPS Subpart A, except where expressly noted. The following is a summary of applicability and non-applicability determinations for NSPS regulations of relevance to the facility. Besides 40 CFR 60 Subpart A (NSPS Subpart A), the following NSPS could potentially apply to the facility:

- 40 CFR Part 60 Subparts D, Da, Db, and Dc – Steam Generating Units

> 40 CFR Part 60 Subparts K, Ka, and Kb – Storage Vessels for Petroleum Liquids/Volatile Organic Liquids
> 40 CFR Part 60 Subpart JJJJ – Stationary Spark Ignition Internal Combustion Engines
> 40 CFR Part 60 Subpart OOOO – Crude Oil and Natural Gas Production, Transmission, and Distribution
> 40 CFR Part 60 Subpart OOOOa – Crude Oil and Natural Gas Facilities

3.3.1. NSPS Subparts D, Da, Db, and Dc - Steam Generating Units

These subparts apply to steam generating units of various sizes, all greater than 10 MMBtu/hr. The facility does not include any steam generating units with a heat input greater than 10 MMBtu/hr, therefore the requirements of these subparts do not apply.

3.3.2. NSPS Subparts K, Ka, and Kb - Storage Vessels for Petroleum Liquids/Volatile Organic Liquids

These subparts apply to storage tanks of certain sizes constructed, reconstructed, or modified during various time periods. Subpart K applies to storage tanks constructed, reconstructed, or modified prior to 1978, and Subpart Ka applies to those constructed, reconstructed, or modified prior to 1984. Both Subparts K and Ka apply to storage tanks with a capacity greater than 40,000 gallons. Subpart Kb applies to volatile organic liquid (VOL) storage tanks constructed, reconstructed, or modified after July 23, 1984 with a capacity equal to or greater than 75 m^3 (~19,813 gallons). All of the tanks at the facility have a capacity less than 19,813 gallons. As such, Subparts K, Ka, and Kb do not apply to the storage tanks at the facility.

3.3.3. NSPS Subpart JJJJ - Stationary Spark Ignition Internal Combustion Engines

Subpart JJJJ – *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*, applies to manufacturers, owners and operators of stationary spark ignition (SI) engines. According to §60.4230(a)(4)(iii), for engines with a maximum engine power less than 500 HP, they must have been manufactured on or after July 1, 2008 for the requirements of this subpart to apply. Per the attached documentation, the compressor engine (CE-2A) was manufactured on November 17, 2007. Therefore, it is not subject to the requirements of this subpart.

The generator engine (GE-1) was manufactured on March 29, 2011 (see attached documentation) and thus is subject to Subpart JJJJ. However, as this unit is an EPA Certified Unit (see attached Certificate of Conformity), the applicant is not required to conduct performance testing. Instead, it is required to operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions.

3.3.4. NSPS Subpart OOOO — Crude Oil and Natural Gas Production, Transmission, and Distribution

Subpart OOOO – *Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution*, applies to affected facilities that commenced construction, reconstruction, or modification after August 23, 2011 and before September 18, 2015. The facility does not include any sources that are affected sources under this regulation. Therefore, the facility has no applicable requirements under this regulation.

Regarding the reciprocating compressor (associated with CE-2A) at the facility, per the email from USA Compression on 1/9/2015 (included in Attachment U), the engine was manufactured on 11/17/2007 and set/operated on location for the first time on 7/28/2008 in Hughes County, OK. Per §60.14(e)(6), the relocation or change in ownership of an existing facility is not considered a modification for NSPS purposes. Therefore, the reciprocating compressor commenced construction prior to the applicability date of Subpart OOOO and is not subject to the requirements of this regulation (rod packing changes, etc.).

3.3.5. NSPS Subpart OOOOa — Crude Oil and Natural Gas Facilities

Subpart OOOOa – *Standards of Standards of Performance for Crude Oil and Natural Gas Facilities*, applies to affected facilities that commenced construction, reconstruction, or modification after September 18, 2015. No sources were installed after September 18, 2015; therefore, the rule does not apply to equipment at the facility.

3.3.6. Non-Applicability of All Other NSPS

NSPS are developed for particular industrial source categories. Other than NSPS developed for natural gas processing plants (Subparts 0000 and 0000a) and associated equipment (Subpart K-Kb), the applicability of a particular NSPS to the facility can be readily ascertained based on the industrial source category covered. All other NSPS are categorically not applicable to the proposed project.

3.4. NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

Part 63 NESHAP allowable emission limits are established on the basis of a maximum achievable control technology (MACT) determination for a particular major source. A HAP major source is defined as having potential emissions in excess of 25 tpy for total HAP and/or potential emissions in excess of 10 tpy for any individual HAP. The facility is an area (minor) source of HAP since its potential emissions of HAP are less than the 10/25 major source thresholds. Besides 40 CFR 63 Subpart A (NESHAP Subpart A), which is similar to 40 CFR 60 Subpart A (NSPS Subpart A), the following NESHAP could potentially apply to the facility:

> 40 CFR Part 63 Subpart HH – Oil and Natural Gas Production Facilities
> 40 CFR Part 63 Subpart ZZZZ – Stationary Reciprocating Internal Combustion Engines
> 40 CFR Part 63 Subpart JJJJJJ – Industrial, Commercial, and Institutional Boilers

3.4.1. NESHAP Subpart HH - Oil and Natural Gas Production Facilities

This MACT standard contains requirements for both major and area sources of HAP. The benzene emissions from the glycol dehydrator vent will be less than 0.90 megagrams per year (1 tpy), therefore, the facility is exempt from the requirements of NESHAP Subpart HH pursuant to 40 CFR §63.764(e)(1)(ii), except for the requirement to keep records of the actual average natural gas flow rate or actual average benzene emissions from the dehydrators, per 40 CFR §63.774(d)(1). The applicant will continue to comply with the requirements of Subpart HH.

3.4.2. NESHAP Subpart ZZZZ - Stationary Reciprocating Internal Combustion Engines

Stationary reciprocating internal combustion engines (RICE) at both area and major sources of HAP emissions are potentially subject to Subpart ZZZZ – NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE). Per §63.6590(a)(2)(iii), a stationary RICE located at an area source of HAP emissions is new if you commenced construction of the stationary reciprocating internal combustion engine (RICE) on or after 6/12/2006. Per the notes above, the compressor engine and generator engine commenced construction after this date, and are therefore a new RICE under Subpart ZZZZ. Per §63.6590(c), "[...] An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 Subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part." Specifically, §63.6590(c)(1) includes "a new or reconstructed stationary RICE located at an area source"; the compressor engine and generator engine fall into this category. Therefore, neither engine has applicable Subpart ZZZZ requirements, other than to comply with any applicable 40 CFR 60 Subpart JJJJ requirements. Please also note that per §63.6590(1)(iv), a change in ownership of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE.

3.4.3. NESHAP JJJJJJ - Industrial, Commercial, and Institutional Boilers

This MACT standard applies to industrial, commercial, and institutional boilers of various sizes and fuel types at area sources. The reboiler is natural gas-fired and thus specifically exempt from this subpart. Therefore, no sources at the facility are subject to any requirements under 40 CFR 63 Subpart JJJJJ.

3.5. WEST VIRGINIA SIP REGULATIONS

The facility is potentially subject to regulations contained in the West Virginia Code of State Regulations, Chapter 45 (Code of State Regulations). The Code of State Regulations fall under two main categories: those regulations that are generally applicable (e.g., permitting requirements), and those that have specific applicability (e.g., PM standards for manufacturing equipment).

3.5.1. 45 CSR 2: To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers

45 CSR 2 applies to fuel burning units, defined as equipment burning fuel "for the primary purpose of producing heat or power by indirect heat transfer". The reboiler is a fuel burning unit and therefore must comply with this regulation. Per 45 CSR 2-3, opacity of emissions from units shall not exceed 10 percent, based on a six-minute block average. Note that as the reboiler is less than 10 MMBtu/hr, it is exempt from PM emission limits.

3.5.2. 45 CSR 4: To Prevent and Control the Discharge of Air Pollutants into the Air Which Causes or Contributes to an Objectionable Odor

According to 45 CSR 4-3:

No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.

The facility is generally subject to this requirement. However, due to the nature of the process at the station, production of objectionable odor during normal operation is unlikely.

3.5.3. 45 CSR 6: To Prevent and Control the Air Pollution from the Combustion of Refuse

45 CSR 6 applies to activities involving incineration of refuse, defined as "the destruction of combustible refuse by burning in a furnace designed for that purpose. For the purposes of this rule, the destruction of any combustible liquid or gaseous material by burning in a flare or flare stack, thermal oxidizer or thermal catalytic oxidizer stack shall be considered incineration." There are no control devices at the facility that utilize 'incineration'.

3.5.4. 45 CSR 10: To Prevent and Control Air Pollution from the Emission of Sulfur Oxides

This rule potentially applies to fuel burning units, including glycol dehydration unit reboilers. Per 45 CSR 10-10.1, units rated less than 10 MMBtu/hr are exempt from the SO_2 emission limitations and testing, monitoring, recordkeeping, and reporting requirements of this rule. The reboiler is rated less than 10 MMBtu/hr and as such is exempt from this rule.

3.5.5. 45 CSR 16: Standards of Performance for New Stationary Sources

45 CSR 16-1 incorporates the federal Clean Air Act (CAA) standards of performance for new stationary sources set forth in 40 CSR Part 60 by reference. As such, by complying with all applicable requirements of 40 CFR Part 60 at the facility, the applicant will be complying with 45 CSR 16.

3.5.6. 45 CSR 17: To Prevent and Control Particulate Matter Air Pollution from Materials Handling, Preparation, Storage and Other Sources of Fugitive Particulate Matter

According to 45 CSR 17-3.1:

No person shall cause, suffer, allow or permit fugitive particulate matter to be discharged beyond the boundary lines of the property lines of the property on which the discharge originates or at any public or residential location, which causes or contributes to statutory air pollution.

Due to the nature of the activities at the facility, it is unlikely that fugitive particulate matter emissions will be emitted under normal operating conditions. However, the applicant will take measures to ensure any fugitive particulate matter emissions will not cross the property boundary should any such emissions occur.

3.5.7. 45 CSR 21-28: Petroleum Liquid Storage in Fixed Roof Tanks

45 CSR 21-28 applies to any fixed roof petroleum liquid storage tank with a capacity greater than 40,000 gallons located in Putnam County, Kanawha County, Cabell County, Wayne County, and Wood County. The capacity of each storage tank at the facility is less than 40,000 gallons and the facility is not located in the listed counties. Therefore, 45 CSR 21-28 does not apply to the storage tanks at this station.

3.5.8. 45 CSR 34: Emissions Standards for Hazardous Air Pollutants

45 CSR 34-1 incorporates the federal Clean Air Act (CAA) national emissions standards for hazardous air pollutants (NESHAPs) as set forth in 40 CPR Parts 61 and 63 by reference. As such, by complying with all applicable requirements of 40 CFR Parts 61 and 63 at the facility, the applicant will be complying with 45 CSR 34.

3.5.9. Non-Applicability of Other SIP Rules

A thorough examination of the West Virginia SIP rules with respect to applicability at the facility reveals many SIP regulations that do not apply or impose additional requirements on operations. Such SIP rules include those specific to a particular type of industrial operation that is categorically not applicable to the facility.

4. G35-D APPLICATION FORMS

The WVDEP permit application forms contained in this application include all applicable G35-D application forms including the required attachments.

west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone (304) 926-0475
Fax (304) 926-0479
www.dep.wv.gov

G35-D GENERAL PERMIT REGISTRATION APPLICATION

PREVENTION AND CONTROL OF AIR POLLUTION IN REGARD TO THE CONSTRUCTION, MODIFICATION, RELOCATION, ADMINISTRATIVE UPDATE AND OPERATION OF NATURAL GAS COMPRESSOR AND/OR DEHYDRATION FACILITIES

☐CONSTRUCTION
☒MODIFICATION
☐RELOCATION
☐CLASS I ADMINISTRATIVE UPDATE
☐CLASS II ADMINISTRATIVE UPDATE

SECTION 1. GENERAL INFORMATION

Name of Applicant (as registered with the WV Secretary of State's Office): Superior Appalachian Pipeline, LLC

Federal Employer ID No. (FEIN): 27-2238421

Applicant's Mailing Address: 4000 Town Center Boulevard, Suite 220

City: Canonsburg	State: PA	ZIP Code: 15317

Facility Name: Preston Compressor Station

Operating Site Physical Address: See lat/long
If none available, list road, city or town and zip of facility.

City: Bruceton Mills	Zip Code: 26525	County: Preston

Latitude & Longitude Coordinates (NAD83, Decimal Degrees to 5 digits):
Latitude: 39.72069
Longitude: -79.59528

SIC Code: 1311 NAICS Code: 211111	DAQ Facility ID No. (For existing facilities) 077-00089

CERTIFICATION OF INFORMATION

This G35-D General Permit Registration Application shall be signed below by a Responsible Official. A Responsible Official is a President, Vice President, Secretary, Treasurer, General Partner, General Manager, a member of the Board of Directors, or Owner, depending on business structure. A business may certify an Authorized Representative who shall have authority to bind the Corporation, Partnership, Limited Liability Company, Association, Joint Venture or Sole Proprietorship. Required records of daily throughput, hours of operation and maintenance, general correspondence, compliance certifications and all required notifications must be signed by a Responsible Official or an Authorized Representative. If a business wishes to certify an Authorized Representative, the official agreement below shall be checked off and the appropriate names and signatures entered. **Any administratively incomplete or improperly signed or unsigned G35-D Registration Application will be returned to the applicant. Furthermore, if the G35-D forms are not utilized, the application will be returned to the applicant. No substitution of forms is allowed.**

I hereby certify that Robert Parks is an Authorized Representative and in that capacity shall represent the interest of the business (e.g., Corporation, Partnership, Limited Liability Company, Association Joint Venture or Sole Proprietorship) and may obligate and legally bind the business. If the business changes its Authorized Representative, a Responsible Official shall notify the Director of the Division of Air Quality immediately.

I hereby certify that all information contained in this G35-D General Permit Registration Application and any supporting documents appended hereto is, to the best of my knowledge, true, accurate and complete, and that all reasonable efforts have been made to provide the most comprehensive information possible.

Responsible Official Signature: Robert A Parks
Name and Title: Robert Parks, President
Phone: (918) 382-7200
Fax: N/A
Email: bparks@superiorpipeline.com
Date: 5/8/2017

If applicable:
Authorized Representative Signature: _____
Name and Title:
Phone:
Fax:
Email:
Date:

If applicable:
Environmental Contact
Name and Title: Jennifer Frazier, Environmental Specialist
Phone: (918) 477-3942
Fax:
Email: jennifer.frazier@unitcorp.com
Date:

OPERATING SITE INFORMATION

Briefly describe the proposed new operation and/or any change(s) to the facility:
No new operation or changes – application is being submitted per WVDEP request to clarify source information regarding the facility.

Directions to the facility:
From 601 57th St SE, Charleston, WV 25304: Head northeast on 57th St SE toward Washington Ave SE (travel 0.1 mi). Turn left onto MacCorkle Ave SE (travel 1.8 mi). Turn right onto 36th St SE (travel 0.2 mi). Continue onto 36th St Southeast Bridge (travel 0.2 mi). Use the right lane to take the ramp onto I-64 W/I-77 N (travel 0.1 mi). Merge onto I-64 W/I-77 N (travel 2.5 mi). Use the right 2 lanes to take the Interstate 77 N/Interstate 79 N exit toward Parkersburg (travel 0.5 mi). Continue onto I-77 N (travel 1.4 mi). Keep right at the fork to continue on I-79 N, follow signs for Clarksburg (travel 148 mi). Use the right 2 lanes to take exit 148 for I-68 E toward Cumberland (travel 0.3 mi). Continue onto I-68 E (travel 22.4 mi). Take exit 23 for WV-26 toward Bruceton Mills (travel 0.2 mi). Turn left onto WV-26 N (travel 1.7 mi). Turn left onto Clifton Mills Rd (travel 3.2 mi). Turn right onto Caton (entering Pennsylvania, travel 2.2 mi). Slight right onto Sr2005 (travel 0.4 mi). Turn right onto Fox Hollow Rd (entering West Virginia); the facility entrance road will be on the left after 0.8 miles.

ATTACHMENTS AND SUPPORTING DOCUMENTS

I have enclosed the following required documents:

Check payable to WVDEP – Division of Air Quality with the appropriate application fee (per 45CSR13 and 45CSR22).

☒ Check attached to front of application.
☐ I wish to pay by electronic transfer. Contact for payment (incl. name and email address):
☐ I wish to pay by credit card. Contact for payment (incl. name and email address):

☒ $500 (Construction, Modification, and Relocation) ☐ $300 (Class II Administrative Update)
☒ $1,000 NSPS fee for 40 CFR60, Subpart IIII, JJJJ and/or OOOO and/or OOOOa [1]
☒ $2,500 NESHAP fee for 40 CFR63, Subpart ZZZZ and/or HH [2]

[1] Only one NSPS fee will apply.
[2] Only one NESHAP fee will apply. The Subpart ZZZZ NESHAP fee will be waived for new engines that satisfy requirements by complying with NSPS, Subparts IIII and/or JJJJ.
NSPS and NESHAP fees apply to new construction or if the source is being modified.

☒ Responsible Official or Authorized Representative Signature (if applicable)	
☒ Single Source Determination Form **(must be completed in its entirety)** – Attachment A	
☐ Siting Criteria Waiver (if applicable) – Attachment B	☒ Current Business Certificate – Attachment C
☒ Process Flow Diagram – Attachment D	☒ Process Description – Attachment E
☒ Plot Plan – Attachment F	☒ Area Map – Attachment G
☒ G35-D Section Applicability Form – Attachment H	☒ Emission Units/ERD Table – Attachment I
☒ Fugitive Emissions Summary Sheet – Attachment J	
☒ Storage Vessel(s) Data Sheet (include gas sample data, USEPA Tanks, simulation software (e.g. ProMax, E&P Tanks, HYSYS, etc.), etc. where applicable) – Attachment K	
☒ Natural Gas Fired Fuel Burning Unit(s) Data Sheet (GPUs, Heater Treaters, In-Line Heaters if applic.) – Attachment L	
☒ Internal Combustion Engine Data Sheet(s) (include manuf. performance data sheet(s) if applicable) – Attachment M	
☒ Tanker Truck Loading Data Sheet (if applicable) – Attachment N	
☒ Glycol Dehydration Unit Data Sheet(s) (include wet gas analysis, GRI- GLYCalc™ input and output reports and information on reboiler if applicable) – Attachment O	
☒ Pneumatic Controllers Data Sheet – Attachment P	
☐ Centrifugal Compressor Data Sheet – Attachment Q	
☒ Reciprocating Compressor Data Sheet – Attachment R	
☒ Blowdown and Pigging Operations Data Sheet – Attachment S	
☒ Air Pollution Control Device/Emission Reduction Device(s) Sheet(s) (include manufacturer performance data sheet(s) if applicable) – Attachment T	
☒ Emission Calculations (please be specific and include all calculation methodologies used) – Attachment U	
☒ Facility-wide Emission Summary Sheet(s) – Attachment V	
☒ Class I Legal Advertisement – Attachment W	
☒ One (1) paper copy and two (2) copies of CD or DVD with pdf copy of application and attachments	

All attachments must be identified by name, divided into sections, and submitted in order.

ATTACHMENT A

Single Source Determination Form

ATTACHMENT A - SINGLE SOURCE DETERMINATION FORM

Classifying multiple facilities as one "stationary source" under 45CSR13, 45CSR14, and 45CSR19 is based on the definition of Building, structure, facility, or installation as given in §45-14-2.13 and §45-19-2.12. The definition states:

"Building, Structure, Facility, or Installation" means all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control). Pollutant-emitting activities are a part of the same industrial grouping if they belong to the same "Major Group" (i.e., which have the same two (2)-digit code) as described in the Standard Industrial Classification Manual, 1987 (United States Government Printing Office stock number GPO 1987 0-185-718:QL 3).

The Source Determination Rule for the oil and gas industry was published in the Federal Register on June 3, 2016 and will become effective on August 2, 2016. EPA defined the term "adjacent" and stated that equipment and activities in the oil and gas sector that are under common control will be considered part of the same source if they are located on the same site or on sites that share equipment and are within ¼ mile of each other.

Is there equipment and activities in the same industrial grouping (defined by SIC code)?

Yes ☐ No ☒

Is there equipment and activities under the control of the same person/people?

Yes ☐ No ☒

Is there equipment and activities located on the same site or on sites that share equipment and are within ¼ mile of each other?

Yes ☐ No ☒

ATTACHMENT A: SINGLE SOURCE DETERMINATION MAP

Figure 1 - Map of Location with 1 Mile Radius Circle

Coordinates:
Latitude: 39° 43' 14.5" N, Longitude: 79° 35' 43.0" W

Siting Criteria Waiver *(not applicable)*

ATTACHMENT B – SITING CRITERIA WAIVER – NOT APPLICABLE

If applicable, please complete this form and it must be notarized.

G35-D General Permit
Siting Criteria Waiver

WV Division of Air Quality 300' Waiver

I _____ hereby
Print Name

acknowledge and agree that _____ will
General Permit Applicant's Name

construct an emission unit(s) at a natural gas compressor and/or dehydration facility that will be located within 300' of my dwelling and/or business.

.

I hereby offer this waiver of siting criteria to the West Virginia Department of Environmental Protection Division of Air Quality as permission to construct, install and operate in such location.

Signed:

_____
Signature Date

_____
Signature Date

Taken, subscribed and sworn before me this _____ day of

_____, 20_____.

My commission expires: _____

SEAL_____
Notary Public

ATTACHMENT C

Current Business Certificate

WEST VIRGINIA
STATE TAX DEPARTMENT

BUSINESS REGISTRATION
CERTIFICATE

ISSUED TO:
SUPERIOR APPALACHIAN PIPELINE, L.L.C.
7130 S LEWIS AVE 1000
TULSA, OK 74136-5492

BUSINESS REGISTRATION ACCOUNT NUMBER: **2246-9272**

This certificate is issued on: 11/24/2010

This certificate is issued by
the West Virginia State Tax Commissioner
in accordance with Chapter 11, Article 12, of the West Virginia Code

The person or organization identified on this certificate is registered to conduct business in the State of West Virginia at the location above.

This certificate is not transferrable and must be displayed at the location for which issued.

This certificate shall be permanent until cessation of the business for which the certificate of registration was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.

Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

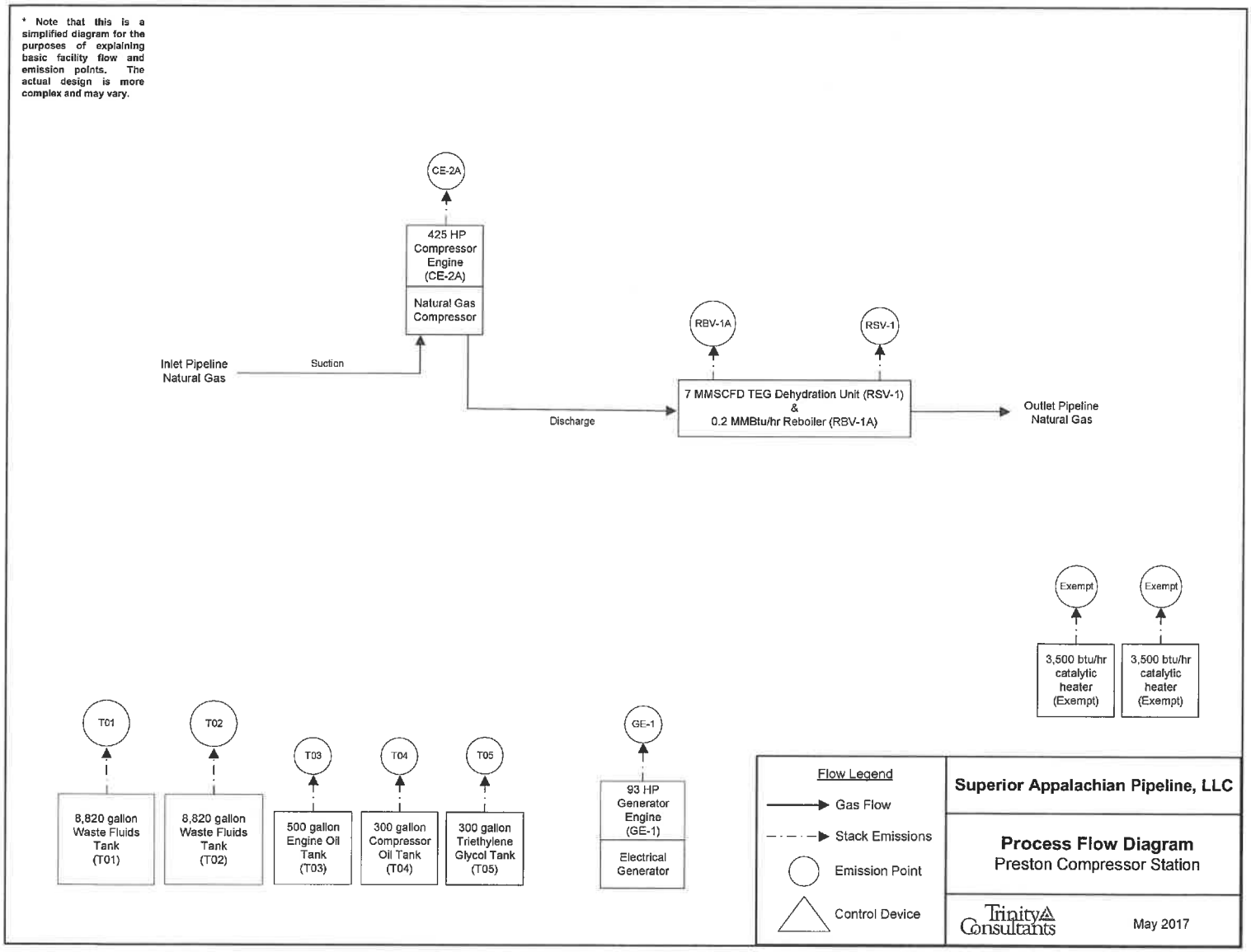
TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them.
CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of this certificate displayed at every job site within West Virginia.

atL006 v.4
L0084664064

ATTACHMENT D

Process Flow Diagram

* Note that this is a simplified diagram for the purposes of explaining basic facility flow and emission points. The actual design is more complex and may vary.



ATTACHMENT E

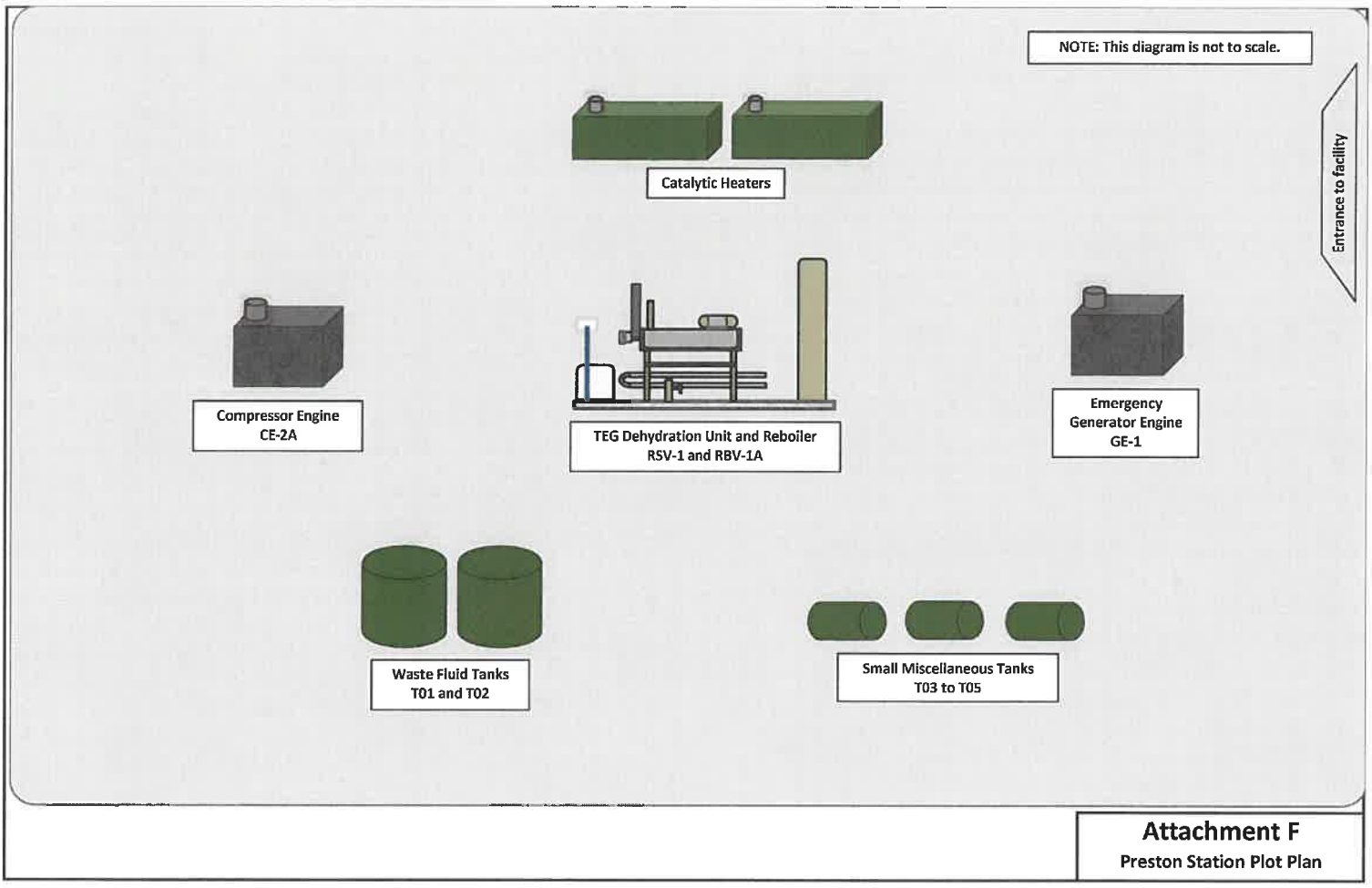
Process Description

ATTACHMENT E: PROCESS DESCRIPTION

The Preston Compressor Station compresses and dehydrates natural gas from production wells prior to transmission along the pipeline system. A reciprocating compressor utilizes the power created by a reciprocating internal combustion engine (RICE) to compress (raise the pressure of) the incoming gas stream. Subsequently, the gas stream passes through a triethylene glycol (TEG) dehydration unit, which introduces TEG to the stream in a contact tower to absorb water vapor from the gas to meet customer specifications. The TEG is then sent to the natural gas-fired reboiler, which uses heat to evaporate entrained water from the TEG. The TEG is then discharged back to the contact tower for reuse. The natural gas stream from the contact tower flows into the pipeline to be transported further along the pipeline system. Emergency electrical power is provided to the facility via a generator engine.

A process flow diagram is included as Attachment D.

Plot Plan



Attachment F
Preston Station Plot Plan

ATTACHMENT G

Area Map

ATTACHMENT G: AREA MAP

Figure 1 - Map of Location

UTM Northing (KM):	4,397.701	UTM Easting (KM):	620.396	Elevation:	~2,015 ft

G35-D Section Applicability Form

ATTACHMENT H – G35-D SECTION APPLICABILITY FORM

General Permit G35-D Registration
Section Applicability Form

General Permit G35-D was developed to allow qualified applicants to seek registration for a variety of sources. These sources include storage vessels, gas production units, in-line heaters, heater treaters, glycol dehydration units and associated reboilers, pneumatic controllers, centrifugal compressors, reciprocating compressors, reciprocating internal combustion engines (RICEs), tank truck loading, fugitive emissions, completion combustion devices, flares, enclosed combustion devices, and vapor recovery systems. All registered facilities will be subject to Sections 1.0, 2.0, 3.0, and 4.0.

General Permit G35-D allows the registrant to choose which sections of the permit they are seeking registration under. Therefore, please mark which additional sections that you are applying for registration under. If the applicant is seeking registration under multiple sections, please select all that apply. Please keep in mind, that if this registration is approved, the issued registration will state which sections will apply to your affected facility.

GENERAL PERMIT G35-D APPLICABLE SECTIONS	
☒ Section 5.0	Storage Vessels Containing Condensate and/or Produced Water[1]
☐ Section 6.0	Storage Vessel Affected Facility (NSPS, Subpart OOOO/OOOOa)
☒ Section 7.0	Control Devices and Emission Reduction Devices not subject to NSPS Subpart OOOO/OOOOa and/or NESHAP Subpart HH
☒ Section 8.0	Small Heaters and Reboilers not subject to 40CFR60 Subpart Dc
☐ Section 9.0	Pneumatic Controllers Affected Facility (NSPS, Subpart OOOO/OOOOa)
☐ Section 10.0	Centrifugal Compressor Affected Facility (NSPS, Subpart OOOO/OOOOa)[2]
☒ Section 11.0	Reciprocating Compressor Affected Facility (NSPS, Subpart OOOO/OOOOa)[2]
☒ Section 12.0	Reciprocating Internal Combustion Engines, Generator Engines. Microturbine Generators
☒ Section 13.0	Tanker Truck Loading[3]
☒ Section 14.0	Glycol Dehydration Units[4]
☒ Section 15.0	Blowdown and Pigging Operations
☒ Section 16.0	Fugitive Emission Components (NSPS, Subpart OOOOa)*

1 *Applicants that are subject to Section 5 may also be subject to Section 6 if the applicant is subject to the NSPS, Subpart OOOO/OOOOa control requirements or the applicable control device requirements of Section 7.*

2 *Applicants that are subject to Section 10 and 11 may also be subject to the applicable RICE requirements of Section 12.*

3 *Applicants that are subject to Section 13 may also be subject to control device and emission reduction device requirements of Section 7.*

4 *Applicants that are subject to Section 14 may also be subject to the requirements of Section 8 (reboilers). Applicants that are subject to Section 14 may also be subject to control device and emission reduction device requirements of Section 7.*

*This station does not have any facilities subject to NSPS OOOOa

ATTACHMENT I

Emission Units/ERD Table

ATTACHMENT I – EMISSION UNITS / EMISSION REDUCTION DEVICES (ERD) TABLE

Include ALL emission units and air pollution control devices/ERDs that will be part of this permit application review. Do not include fugitive emission sources in this table. Deminimis storage tanks shall be listed in the Attachment K table. This information is required for all sources regardless of whether it is a construction, modification, or administrative update.

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed	Manufac. Date[3]	Design Capacity	Type[4] and Date of Change	Control Device(s)[5]	ERD(s)[6]
CE-2A	CE-2A	Compressor Engine	2014	2007	425 HP	Existing	C2A	---
GE-1	GE-1	Generator Engine	2011	2011	93 HP	Existing	None	---
RSV-1	RSV-1	Dehydration Unit	2011	---	7 MMSCFD	Existing	None	---
RBV-1A	RBV-1A	Reboiler	2014	---	0.2 MMbtu/hr	Existing	None	---
T01	T01	Waste Fluid Tank	2011	---	8,820 Gallons	Existing	None	---
T02	T02	Waste Fluid Tank	2011	---	8,820 Gallons	Existing	None	---
T03	T03	Engine Oil Tank	2011	---	500 Gallons	Existing	None	---
T04	T04	Compressor Oil Tank	2011	---	300 Gallons	Existing	None	---
T05	T05	Triethylene Glycol Tank	2011	---	300 Gallons	Existing	None	---
L01	L01	Liquid Loading	2011	---	211,680 Gallons	Existing	None	---
---	---	Catalytic Heaters	2011	---	0.007 MMbtu/hr	Existing	None	---
---	---	Fugitives	2011	---	---	Existing	None	---
---	---	Haul Roads	2011	---	---	Existing	None	---

[1] For Emission Units (or Sources) use the following numbering system:1S, 2S, 3S,... or other appropriate designation.
[2] For Emission Points use the following numbering system:1E, 2E, 3E, ... or other appropriate designation.
[3] When required by rule
[4] New, modification, removal, existing
[5] For Control Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.
[6] For ERDs use the following numbering system: 1D, 2D, 3D,... or other appropriate designation.

ATTACHMENT J

Fugitive Emission Summary Sheet(s)

ATTACHMENT J – FUGITIVE EMISSIONS SUMMARY SHEET

Sources of fugitive emissions may include loading operations, equipment leaks, blowdown emissions, etc.
Use extra pages for each associated source or equipment if necessary.

Source/Equipment: Fugitive Emissions

Leak Detection Method Used	☐ Audible, visual, and olfactory (AVO) inspections	☐ Infrared (FLIR) cameras	☐ Other (please describe)	☐ None required

Is the facility subject to quarterly LDAR monitoring under 40CFR60 Subpart OOOOa? ☒ Yes ☐ No. If no, why?

Component Type	Closed Vent System	Count	Source of Leak Factors (EPA, other (specify))	Stream type (gas, liquid, etc.)	Estimated Emissions (tpy)		
					VOC	HAP	GHG (CO_2e)
Pumps	☐ Yes ☒ No	3	U.S. EPA. Office of Air Quality Planning and Standards. Protocol for Equipment Leak Emission Estimates. Table 2-1. (EPA-453/R-95-017, 1995).	☐ Gas ☒ Liquid ☐ Both	0.58	0.06	0.14
Valves	☐ Yes ☒ No	78	U.S. EPA. Office of Air Quality Planning and Standards. Protocol for Equipment Leak Emission Estimates. Table 2-1. (EPA-453/R-95-017, 1995).	☒ Gas ☐ Liquid ☐ Both	0.01	9.4E-04	9.50
Safety Relief Valves	☐ Yes ☒ No	7	U.S. EPA. Office of Air Quality Planning and Standards. Protocol for Equipment Leak Emission Estimates. Table 2-1. (EPA-453/R-95-017, 1995).	☒ Gas ☐ Liquid ☐ Both	0.01	1.5E-03	1.26
Open Ended Lines	☐ Yes ☒ No	3	U.S. EPA. Office of Air Quality Planning and Standards. Protocol for Equipment Leak Emission Estimates. Table 2-1. (EPA-453/R-95-017, 1995).	☐ Gas ☐ Liquid ☒ Both	1.0E-04	1.0E-05	0.83
Sampling Connections	☐ Yes ☒ No	---	N/A	☐ Gas ☐ Liquid ☐ Both	---	---	---
Connections (Not sampling)	☐ Yes ☒ No	324	U.S. EPA. Office of Air Quality Planning and Standards. Protocol for Equipment Leak Emission Estimates. Table 2-1. (EPA-453/R-95-017, 1995).	☐ Gas ☐ Liquid ☒ Both	0.01	1.2E-03	4.39
Compressors	☐ Yes ☒ No	1	U.S. EPA. Office of Air Quality Planning and Standards. Protocol for Equipment Leak Emission Estimates. Table 2-1. (EPA-453/R-95-017, 1995).	☒ Gas ☐ Liquid ☐ Both	4.6E-03	4.6E-04	18.82
Flanges	☐ Yes ☐ No	---	(included in connections)	☐ Gas ☐ Liquid ☐ Both	---	---	---
Other[1]	☐ Yes ☒ No	0	(pneumatic controllers are air-powered)	☒ Gas ☐ Liquid ☐ Both	0	0	0

[1] Other equipment types may include compressor seals, relief valves, diaphragms, drains, meters, etc.

Please indicate if there are any closed vent bypasses (include component):

Specify all equipment used in the closed vent system (e.g. VRU, ERD, thief hatches, tanker truck loading, etc.)

ATTACHMENT K

Storage Vessel Data Sheet(s)

ATTACHMENT K – STORAGE VESSEL DATA SHEET

Complete this data sheet if you are the owner or operator of a storage vessel that contains condensate and/or produced water. This form must be completed for ***each*** new or modified bulk liquid storage vessel(s) that contains condensate and/or produced water. (If you have more than one (1) identical tank (i.e. 4-400 bbl condensate tanks), then you can list all on one (1) data sheet). **Include gas sample analysis, flashing emissions, working and breathing losses, USEPA Tanks, simulation software (ProMax, E&P Tanks, HYSYS, etc.), and any other supporting documents where applicable.**

The following information is REQUIRED:

☒ Composition of the representative sample used for the simulation
☒ For each stream that contributes to flashing emissions:
- ☒ Temperature and pressure (inlet and outlet from separator(s))
- ☒ Simulation-predicted composition
- ☒ Molecular weight
- ☒ Flow rate

☒ Resulting flash emission factor or flashing emissions from simulation
☒ Working/breathing loss emissions from tanks and/or loading emissions if simulation is used to quantify those emissions

Additional information may be requested if necessary.

GENERAL INFORMATION

1. Bulk Storage Area Name Preston Compressor Station	2. Tank Name Waste Fluids Tank(s)
3. Emission Unit ID number T01 & T02	4. Emission Point ID number T01 & T02
5. Date Installed , Modified or Relocated *(for existing tanks)* 2011 (T01 & T02) Was the tank manufactured after August 23, 2011? ☐ Yes ☒ No	6. Type of change: ☐ New construction ☐ New stored material ☒ Other (none) ☐ Relocation
7A. Description of Tank Modification *(if applicable)* N/A	
7B. Will more than one material be stored in this tank? *If so, a separate form must be completed for each material.* ☐ Yes ☒ No	
7C. Was USEPA Tanks simulation software utilized? ☐ Yes ☒ No ***If Yes, please provide the appropriate documentation and items 8-42 below are not required.***	

TANK INFORMATION

8. Design Capacity *(specify barrels or gallons)*. Use the internal cross-sectional area multiplied by internal height. 210 bbls (each)	
9A. Tank Internal Diameter (ft.) 10	9B. Tank Internal Height (ft.) 15
10A. Maximum Liquid Height (ft.) 15	10B. Average Liquid Height (ft.) 7.5
11A. Maximum Vapor Space Height (ft.) 15	11B. Average Vapor Space Height (ft.) 7.5
12. Nominal Capacity *(specify barrels or gallons)*. This is also known as "working volume". 210 bbls (each)	
13A. Maximum annual throughput (gal/yr) **See attached emissions calculations for all throughput values**	13B. Maximum daily throughput (gal/day) **See attached emissions calculations for all throughput values**
14. Number of tank turnovers per year **See attached emissions calculations for all throughput values**	15. Maximum tank fill rate (gal/min) **See attached emissions calculations for all throughput values**
16. Tank fill method ☐ Submerged ☒ Splash ☐ Bottom Loading	
17. Is the tank system a variable vapor space system? ☐ Yes ☒ No If yes, (A) What is the volume expansion capacity of the system (gal)? (B) What are the number of transfers into the system per year?	
18. Type of tank (check all that apply): ☒ Fixed Roof ☒ vertical ☐ horizontal ☐ flat roof ☒ cone roof ☐ dome roof ☐ other (describe) ☐ External Floating Roof ☐ pontoon roof ☐ double deck roof ☐ Domed External (or Covered) Floating Roof ☐ Internal Floating Roof ☐ vertical column support ☐ self-supporting ☐ Variable Vapor Space ☐ lifter roof ☐ diaphragm ☐ Pressurized ☐ spherical ☐ cylindrical ☐ Other (describe)	

PRESSURE/VACUUM CONTROL DATA

19. Check as many as apply:

☐ Does Not Apply ☐ Rupture Disc (psig)

☐ Inert Gas Blanket of _____ ☐ Carbon Adsorption[1]

☐ Vent to Vapor Combustion Device[1] (vapor combustors, flares, thermal oxidizers, enclosed combustors)

☐ Conservation Vent (psig) ☐ Condenser[1]

Vacuum Setting Pressure Setting

☐ Emergency Relief Valve (psig)

Vacuum Setting Pressure Setting

☒ Thief Hatch Weighted ☒ Yes ☐ No

[1] Complete appropriate Air Pollution Control Device Sheet

20. Expected Emission Rate (submit Test Data or Calculations here or elsewhere in the application).

Material Name	Flashing Loss		Breathing Loss		Working Loss		Total Emissions Loss		Estimation Method[1]
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	
See attached Emissions Calculation for all values									

[1] EPA = EPA Emission Factor, MB = Material Balance, SS = Similar Source, ST = Similar Source Test, Throughput Data, O = Other (specify)

Remember to attach emissions calculations, including TANKS Summary Sheets and other modeling summary sheets if applicable.

TANK CONSTRUCTION AND OPERATION INFORMATION			
21. Tank Shell Construction: ☒ Riveted ☐ Gunite lined ☐ Epoxy-coated rivets ☐ Other (describe)			
21A. Shell Color:	21B. Roof Color:	21C. Year Last Painted:	
22. Shell Condition (if metal and unlined): ☐ No Rust ☒ Light Rust ☐ Dense Rust ☐ Not applicable			
22A. Is the tank heated? ☐ Yes ☒ No	22B. If yes, operating temperature:	22C. If yes, how is heat provided to tank?	
23. Operating Pressure Range (psig): TBD **Must be listed for tanks using VRUs with closed vent system.**			
24. Is the tank a **Vertical Fixed Roof Tank**? ☒ Yes ☐ No	24A. If yes, for dome roof provide radius (ft):	24B. If yes, for cone roof, provide slop (ft/ft):	
25. Complete item 25 for **Floating Roof Tanks** ☐ Does not apply ☒			
25A. Year Internal Floaters Installed:			
25B. Primary Seal Type *(check one)*: ☐ Metallic (mechanical) shoe seal ☐ Liquid mounted resilient seal ☐ Vapor mounted resilient seal ☐ Other (describe):			
25C. Is the Floating Roof equipped with a secondary seal? ☐ Yes ☐ No			
25D. If yes, how is the secondary seal mounted? *(check one)* ☐ Shoe ☐ Rim ☐ Other (describe):			
25E. Is the floating roof equipped with a weather shield? ☐ Yes ☐ No			
25F. Describe deck fittings:			
26. Complete the following section for **Internal Floating Roof Tanks** ☒ Does not apply			
26A. Deck Type: ☐ Bolted ☐ Welded	26B. For bolted decks, provide deck construction:		
26C. Deck seam. Continuous sheet construction: ☐ 5 ft. wide ☐ 6 ft. wide ☐ 7 ft. wide ☐ 5 x 7.5 ft. wide ☐ 5 x 12 ft. wide ☐ other (describe)			
26D. Deck seam length (ft.):	26E. Area of deck (ft^2):	26F. For column supported tanks, # of columns:	26G. For column supported tanks, diameter of column:
27. Closed Vent System with VRU? ☐ Yes ☒ No			
28. Closed Vent System with Enclosed Combustor? ☐ Yes ☒ No			
SITE INFORMATION - Not Applicable: Tank calculations performed using E&P TANK software			
29. Provide the city and state on which the data in this section are based:			
30. Daily Avg. Ambient Temperature (°F):	31. Annual Avg. Maximum Temperature (°F):		
32. Annual Avg. Minimum Temperature (°F):	33. Avg. Wind Speed (mph):		
34. Annual Avg. Solar Insulation Factor (BTU/ft^2-day):	35. Atmospheric Pressure (psia):		
LIQUID INFORMATION - Not Applicable: Tank calculations performed using E&P TANK software			
36. Avg. daily temperature range of bulk liquid (°F):	36A. Minimum (°F):	36B. Maximum (°F):	
37. Avg. operating pressure range of tank (psig):	37A. Minimum (psig):	37B. Maximum (psig):	
38A. Minimum liquid surface temperature (°F):	38B. Corresponding vapor pressure (psia):		
39A. Avg. liquid surface temperature (°F):	39B. Corresponding vapor pressure (psia):		
40A. Maximum liquid surface temperature (°F):	40B. Corresponding vapor pressure (psia):		
41. Provide the following for each liquid or gas to be stored in the tank. Add additional pages if necessary.			
41A. Material name and composition:			
41B. CAS number:			
41C. Liquid density (lb/gal):			
41D. Liquid molecular weight (lb/lb-mole):			
41E. Vapor molecular weight (lb/lb-mole):			
41F. Maximum true vapor pressure (psia):			
41G. Maximum Reid vapor pressure (psia):			
41H. Months Storage per year. From: To:			
42. Final maximum gauge pressure and temperature prior to transfer into tank used as inputs into flashing emission calculations.			

STORAGE TANK DATA TABLE

List all deminimis storage tanks (i.e. lube oil, glycol, diesel etc.)

Source ID #[1]	Status[2]	Content[3]	Volume[4]
T03	Existing	Engine Oil	500 gallons
T04	Existing	Compressor Oil	300 gallons
T05	Existing	Triethylene Glycol	300 gallons

1. Enter the appropriate Source Identification Numbers (Source ID #) for each storage tank located at the compressor station. Tanks should be designated T01, T02, T03, etc.
2. Enter storage tank Status using the following:
   - EXIST Existing Equipment
   - NEW Installation of New Equipment
   - REM Equipment Removed
3. Enter storage tank content such as condensate, pipeline liquids, glycol (DEG or TEG), lube oil, diesel, mercaptan etc.
4. Enter the maximum design storage tank volume in gallons.

Natural Gas Fired Fuel Burning Unit Data Sheet(s)

ATTACHMENT L – SMALL HEATERS AND REBOILERS NOT SUBJECT TO 40CFR60 SUBPART DC DATA SHEET

Complete this data sheet for each small heater and reboiler not subject to 40CFR60 Subpart Dc at the facility. ***The Maximum Design Heat Input (MDHI) must be less than 10 MMBTU/hr.***

Emission Unit ID#[1]	Emission Point ID#[2]	Emission Unit Description (manufacturer, model #)	Year Installed/ Modified	Type[3] and Date of Change	Maximum Design Heat Input (MMBTU/hr)[4]	Fuel Heating Value (BTU/scf)[5]
RBV-1A	RBV-1A	Reboiler	2014	Existing	0.2	1,021
Exempt	Exempt	Catalytic Heaters	2011	Existing	0.007 (total)	1,021

1 Enter the appropriate Emission Unit (or Source) identification number for each fuel burning unit located at the production pad. Gas Producing Unit Burners should be designated GPU-1, GPU-2, etc. Heater Treaters should be designated HT-1, HT-2, etc. Heaters or Line Heaters should be designated LH-1, LH-2, etc. For sources, use 1S, 2S, 3S…or other appropriate designation. Enter glycol dehydration unit Reboiler Vent data on the Glycol Dehydration Unit Data Sheet.

2 Enter the appropriate Emission Point identification numbers for each fuel burning unit located at the production pad. Gas Producing Unit Burners should be designated GPU-1, GPU-2, etc. Heater Treaters should be designated HT-1, HT-2, etc. Heaters or Line Heaters should be designated LH-1, LH-2, etc. For emission points, use 1E, 2E, 3E…or other appropriate designation.

3 New, modification, removal

4 Enter design heat input capacity in MMBtu/hr.

5 Enter the fuel heating value in BTU/standard cubic foot.

Internal Combustion Engine Data Sheet(s)

ATTACHMENT M – INTERNAL COMBUSTION ENGINE DATA SHEET

Complete this data sheet for each internal combustion engine at the facility. Include manufacturer performance data sheet(s) or any other supporting document if applicable. Use extra pages if necessary. *Generator(s) and microturbine generator(s) shall also use this form.*

Emission Unit ID#[1]	CE-2A	GE-1
Engine Manufacturer/Model	Caterpillar G3408TALE	General Motors 5.7L
Manufacturers Rated bhp/rpm	425	93
Source Status[2]	Existing	Existing
Date Installed/ Modified/Removed/Relocated[3]	Installed 2014	Installed 2011
Engine Manufactured /Reconstruction Date[4]	Manufactured 11/17/2007	Manufactured 3/29/2011
Check all applicable Federal Rules for the engine (include EPA Certificate of Conformity if applicable)[5]	☐ 40CFR60 Subpart JJJJ ☐ JJJJ Certified? ☐ 40CFR60 Subpart IIII ☐ IIII Certified? ☒ 40CFR63 Subpart ZZZZ ☐ NESHAP ZZZZ / NSPS JJJJ Window ☐ NESHAP ZZZZ Remote Sources	☒ 40CFR60 Subpart JJJJ ☒ JJJJ Certified? ☐ 40CFR60 Subpart IIII ☐ IIII Certified? ☒ 40CFR63 Subpart ZZZZ ☐ NESHAP ZZZZ / NSPS JJJJ Window ☐ NESHAP ZZZZ Remote Sources
Engine Type[6]	4SLB	4SRB
APCD Type[7]	LEC	LEC
Fuel Type[8]	PQ	PQ
H_2S (gr/100 scf)	Neg.	Neg.
Operating bhp/rpm	425	93
BSFC (BTU/bhp-hr)	8,588	8,773
Hourly Fuel Throughput	3,574 ft^3/hr	799 ft^3/hr
Annual Fuel Throughput (Must use 8,760 hrs/yr unless emergency generator)	31.3 $MMft^3$/yr	0.4 $MMft^3$/yr
Fuel Usage or Hours of Operation Metered	Yes ☒ No ☐	Yes ☒ No ☐

Calculation Methodology[9]	Pollutant[10]	Hourly PTE (lb/hr)[11]	Annual PTE (tpy)[11]	Hourly PTE (lb/hr)[11]	Annual PTE (tpy)[11]
See Emissions Calculations	NO_X	1.87	8.21	2.05	0.51
See Emissions Calculations	CO	1.52	6.65	2.05	0.51
See Emissions Calculations	VOC	0.58	2.54	2.07	0.52
See Emissions Calculations	SO_2	2.15E-03	0.01	4.80E-04	1.20E-04
See Emissions Calculations	PM_{10}	0.04	0.16	0.02	3.96E-03
See Emissions Calculations	Formaldehyde	0.26	1.15	0.02	4.18E-03
See Emissions Calculations	Total HAPs	0.33	1.46	0.03	0.01
See Emissions Calculations	GHG (CO_2e)	510	2,233	96	24

1 Enter the appropriate Source Identification Number for each natural gas-fueled reciprocating internal combustion compressor/generator engine located at the compressor station. Multiple compressor engines should be designated CE-1, CE-2, CE-3 etc. Generator engines should be designated GE-1, GE-2, GE-3 etc. Microturbine generator engines should be designated MT-1, MT-2, MT-3 etc. If more than three (3) engines exist, please use additional sheets.

2 Enter the Source Status using the following codes:

NS	Construction of New Source (installation)	ES	Existing Source
MS	Modification of Existing Source	RS	Relocated Source
REM	Removal of Source		

3 Enter the date (or anticipated date) of the engine's installation (construction of source), modification, relocation or removal.

4 Enter the date that the engine was manufactured, modified or reconstructed.

5 Is the engine a certified stationary spark ignition internal combustion engine according to 40CFR60 Subpart IIII/JJJJ? If so, the engine and control device must be operated and maintained in accordance with the manufacturer's emission-related written instructions. You must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required. If the certified engine is not operated and maintained in accordance with the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine and you must demonstrate compliance as appropriate.

Provide a manufacturer's data sheet for all engines being registered.

6 Enter the Engine Type designation(s) using the following codes:

2SLB	Two Stroke Lean Burn	4SRB	Four Stroke Rich Burn
4SLB	Four Stroke Lean Burn		

7 Enter the Air Pollution Control Device (APCD) type designation(s) using the following codes:

A/F	Air/Fuel Ratio	IR	Ignition Retard
HEIS	High Energy Ignition System	SIPC	Screw-in Precombustion Chambers
PSC	Prestratified Charge	LEC	Low Emission Combustion
NSCR	Rich Burn & Non-Selective Catalytic Reduction	OxCat	Oxidation Catalyst
SCR	Lean Burn & Selective Catalytic Reduction		

8 Enter the Fuel Type using the following codes:

PQ	Pipeline Quality Natural Gas	RG	Raw Natural Gas /Production Gas	D	Diesel

9 Enter the Potential Emissions Data Reference designation using the following codes. Attach all reference data used.

MD	Manufacturer's Data	AP	AP-42	
GR	GRI-HAPCalc™	OT	Other	(please list)

10 Enter each engine's Potential to Emit (PTE) for the listed regulated pollutants in pounds per hour and tons per year. PTE shall be calculated at manufacturer's rated brake horsepower and may reflect reduction efficiencies of listed Air Pollution Control Devices. Emergency generator engines may use 500 hours of operation when calculating PTE. PTE data from this data sheet shall be incorporated in the *Emissions Summary Sheet*.

11 PTE for engines shall be calculated from manufacturer's data unless unavailable.

Engine Air Pollution Control Device
(Emission Unit ID# *Not Applicable*, use extra pages as necessary)

Air Pollution Control Device Manufacturer's Data Sheet included?
Yes ☐ No ☐

☐ NSCR ☐ SCR ☐ Oxidation Catalyst

Provide details of process control used for proper mixing/control of reducing agent with gas stream:

Manufacturer:	Model #:
Design Operating Temperature:	Design gas volume:
Service life of catalyst:	Provide manufacturer data? ☐Yes ☐ No
Volume of gas handled: acfm at °F	Operating temperature range for NSCR/Ox Cat: From °F to °F
Reducing agent used, if any:	Ammonia slip (ppm): N/A

Pressure drop against catalyst bed (delta P): inches of H_2O

Provide description of warning/alarm system that protects unit when operation is not meeting design conditions:

Is temperature and pressure drop of catalyst required to be monitored per 40CFR63 Subpart ZZZZ?
☐ Yes ☐ No

How often is catalyst recommended or required to be replaced (hours of operation)?

How often is performance test required?
☐ Initial
☐ Annual
☐ Every 8,760 hours of operation
☐ Field Testing Required
☐ No performance test required. If so, why (please list any maintenance required and the applicable sections in NSPS/GACT,

ATTACHMENT N

Tanker Truck Loading Data Sheet(s)

ATTACHMENT N – TANKER TRUCK LOADING DATA SHEET

Complete this data sheet for each new or modified bulk liquid transfer area or loading rack at the facility. This is to be used for bulk liquid transfer operations to tanker trucks. Use extra pages if necessary.

Truck Loadout Collection Efficiencies

The following applicable capture efficiencies of a truck loadout are allowed:

- For tanker trucks passing the MACT level annual leak test – 99.2%
- For tanker trucks passing the NSPS level annual leak test – 98.7%
- For tanker trucks not passing one of the annual leak tests listed above – 70%

Compliance with this requirement shall be demonstrated by keeping records of the applicable MACT or NSPS Annual Leak Test certification for ***every*** truck and railcar loaded/unloaded. This requirement can be satisfied if the trucking company provided certification that its entire fleet was compliant. This certification must be submitted in writing to the Director of the DAQ. These additional requirements must be noted in the Registration Application and will be noted on the issued G35-D Registration.

Emission Unit ID#: L01	Emission Point ID#: L01	Year Installed/Modified: 2011
Emission Unit Description: Liquid loading of waste fluids		
Loading Area Data		
Number of Pumps: 3	Number of Liquids Loaded: 1	Max number of trucks loading at one (1) time: 1
Are tanker trucks pressure tested for leaks at this or any other location? ☐ Yes ☒ No ☒ Not Required If Yes, Please describe:		
Provide description of closed vent system and any bypasses. N/A		
Are any of the following truck loadout systems utilized? ☐ Closed System to tanker truck passing a MACT level annual leak test? ☐ Closed System to tanker truck passing a NSPS level annual leak test? ☐ Closed System to tanker truck not passing an annual leak test and has vapor return?		

Projected Maximum Operating Schedule (for rack or transfer point as a whole)

Time	Jan – Mar	Apr - Jun	Jul – Sept	Oct - Dec
Hours/day	2	2	2	2
Days/week	5	5	5	5

Bulk Liquid Data (use extra pages as necessary)

Liquid Name	Waste Fluids		
Max. Daily Throughput (1000 gal/day)	0.58		
Max. Annual Throughput (1000 gal/yr)	211.68		
Loading Method[1]	SP		
Max. Fill Rate (gal/min)	TBD		
Average Fill Time (min/loading)	TBD		
Max. Bulk Liquid Temperature (°F)	52.14		
True Vapor Pressure[2]	0.3240		
Cargo Vessel Condition[3]	U		
Control Equipment or Method[4]	None		

Max. Collection Efficiency (%)		0			
Max. Control Efficiency (%)		0			
Max.VOC Emission Rate	Loading (lb/hr)	**See attached emissions calculations**			
	Annual (ton/yr)				
Max.HAP Emission Rate	Loading (lb/hr)				
	Annual (ton/yr)				
Estimation Method[5]		EPA			

1 BF Bottom Fill SP Splash Fill SUB Submerged Fill

2 At maximum bulk liquid temperature

3 B Ballasted Vessel C Cleaned U Uncleaned (dedicated service)
O Other (describe)

4 List as many as apply (complete and submit appropriate Air Pollution Control Device Sheets)
CA Carbon Adsorption VB Dedicated Vapor Balance (closed system)
ECD Enclosed Combustion Device F Flare
TO Thermal Oxidization or Incineration

5 EPA EPA Emission Factor in AP-42 MB Material Balance
TM Test Measurement based upon test data submittal O Other (describe)

ATTACHMENT O

Glycol Dehydration Unit Data Sheet(s)

ATTACHMENT O – GLYCOL DEHYDRATION UNIT DATA SHEET

Complete this data sheet for each Glycol Dehydration Unit, Reboiler, Flash Tank and/or Regenerator at the facility. Include gas sample analysis and GRI- GLYCalc™ input and aggregate report. Use extra pages if necessary.

Manufacturer: **RSV-1**	Model: 7 MMSCFD
Max. Dry Gas Flow Rate: 7 mmscf/day	Reboiler Design Heat Input: 0.2 MMBTU/hr
Design Type: ☒ TEG ☐ DEG ☐ EG	Source Status[1]: Existing
Date Installed/Modified/Removed[2]: 2011	Regenerator Still Vent APCD/ERD[3]: N/A
Control Device/ERD ID#[3]: N/A (see notes below)	Fuel HV (BTU/scf): 1,021
H_2S Content (gr/100 scf): neg.	Operation (hours/year): 8,760
Pump Rate (scfm): 1.5 gpm glycol	
Water Content (wt %) in: Wet Gas: Saturated	Dry Gas: 7.0 lbs/MMscf

Is the glycol dehydration unit exempt from 40CFR63 Section 764(d)?
☒ Yes ☐ No: If Yes, answer the following:

The actual annual average flowrate of natural gas to the glycol dehydration unit is less than 85 thousand standard cubic meters per day, as determined by the procedures specified in §63.772(b)(1) of this subpart.
☐ Yes ☒ No

The actual average emissions of benzene from the glycol dehydration unit process vent to the atmosphere are less than 0.90 megagram per year (1 ton per year), as determined by the procedures specified in §63.772(b)(2) of this subpart.
☒ Yes ☐ No

Is the glycol dehydration unit located within an Urbanized Area (UA) or Urban Cluster (UC)?
☐ Yes ☒ No

Is a lean glycol pump optimization plan being utilized?
☐ Yes ☒ No

Recycling the glycol dehydration unit back to the flame zone of the reboiler.
☐ Yes ☒ No

If yes:
Is the reboiler configured to accept flash drum vapors (straight from the glycol dehydrator)? ☐ Yes ☐ No
Is the reboiler configured to accept still vent vapors (after a condenser)? ☐ Yes ☐ No
Is the reboiler configured to accept both in the same operation? ☐ Yes ☐ No

Recycling the glycol dehydration unit back to the flame zone of the reboiler and mixed with fuel.
☐ Yes ☒ No

What happens when temperature controller shuts off fuel to the reboiler?
☒ Still vent emissions to the atmosphere.
☐ Still vent emissions stopped with valve.
☐ Still vent emissions to glow plug.

Please indicate if the following equipment is present.
☒ Flash Tank (present but not utilized)
☐ Burner management system that continuously burns condenser or flash tank vapors

Control Device Technical Data

Pollutants Controlled	Manufacturer's Guaranteed Control Efficiency (%)
n/a	

Emissions Data					
Emission Unit ID / Emission Point ID[4]	**Description**	**Calculation Methodology[5]**	**PTE[6]**	**Controlled Maximum Hourly Emissions (lb/hr)**	**Controlled Maximum Annual Emissions (tpy)**
RBV-1A	Reboiler Vent	AP	NO_x	0.02	0.09
		AP	CO	0.02	0.07
		AP	VOC	1.1E-03	4.7E-03
		AP	SO_2	1.2E-04	5.1E-04
		AP	PM_{10}	3.7E-04	1.6E-03
		40 CFR 98	GHG (CO_2e)	23.42	102.60
RSV-1	Glycol Regenerator Still Vent	GRI-GlyCalc™	VOC	0.13	0.55
		GRI-GlyCalc™	Benzene	<0.01	<0.01
		GRI-GlyCalc™	Toluene	<0.01	<0.01
		GRI-GlyCalc™	Ethylbenzene	<0.01	<0.01
		GRI-GlyCalc™	Xylenes	<0.01	<0.01
		GRI-GlyCalc™	n-Hexane	0.03	0.13
n/a	Glycol Flash Tank	GRI-GlyCalc™	VOC	---	---
		GRI-GlyCalc™	Benzene	---	---
		GRI-GlyCalc™	Toluene	---	---
		GRI-GlyCalc™	Ethylbenzene	---	---
		GRI-GlyCalc™	Xylenes	---	---
		GRI-GlyCalc™	n-Hexane	---	---

1 Enter the Source Status using the following codes:
NS Construction of New Source ES Existing Source
MS Modification of Existing Source

2 Enter the date (or anticipated date) of the glycol dehydration unit's installation (construction of source), modification or removal.

3 Enter the Air Pollution Control Device (APCD)/Emission Reduction Device (ERD) type designation using the following codes and the device ID number:
NA None CD Condenser FL Flare
CC Condenser/Combustion Combination TO Thermal Oxidizer O Other (please list)

4 Enter the appropriate Emission Unit ID Numbers and Emission Point ID Numbers for the glycol dehydration unit reboiler vent and glycol regenerator still vent. The glycol dehydration unit reboiler vent and glycol regenerator still vent should be designated RBV-1 and RSV-1, respectively. If the compressor station incorporates multiple glycol dehydration units, a Glycol Dehydration Emission Unit Data Sheet shall be completed for each, using Source Identification RBV-2 and RSV-2, RBV-3 and RSV-3, etc.

5 Enter the Potential Emissions Data Reference designation using the following codes:
MD Manufacturer's Data AP AP-42
GR GRI-GLYCalc™ OT Other (please list)

6 Enter the Reboiler Vent and Glycol Regenerator Still Vent Potential to Emit (PTE) for the listed regulated pollutants in lbs per hour and tons per year. The Glycol Regenerator Still Vent potential emissions may be determined using the most recent version of the thermodynamic software model GRI-GLYCalc™ (Radian International LLC & Gas Research Institute). **Attach all referenced Potential Emissions Data (or calculations) and the GRI-GLYCalc™ Aggregate Calculations Report (shall include emissions reports, equipment reports, and stream reports) to this Glycol Dehydration Emission Unit Data Sheet(s). Backup pumps do not have to be considered as operating for purposes of PTE.** This PTE data shall be incorporated in the Emissions Summary Sheet.

ATTACHMENT P

Pneumatic Controller Data Sheet(s)

ATTACHMENT P – PNEUMATIC CONTROLLERS DATA SHEET

Are there any continuous bleed natural gas driven pneumatic controllers at this facility that commenced construction, modification or reconstruction after August 23, 2011, and on or before September 18, 2015?

☐ Yes ☒ No

Please list approximate number.

Are there any continuous bleed natural gas driven pneumatic controllers at this facility that commenced construction, modification or reconstruction after September 18, 2015?

☐ Yes ☒ No

Please list approximate number.

Are there any continuous bleed natural gas driven pneumatic controllers at this facility with a bleed rate greater than 6 standard cubic feet per hour that are required based on functional needs, including but not limited to response time, safety and positive actuation that commenced construction, modification or reconstruction after August 23, 2011, and on or before September 18, 2015?

☐ Yes ☒ No

Please list approximate number.

Are there any continuous bleed natural gas driven pneumatic controllers at this facility with a bleed rate greater than 6 standard cubic feet per hour that are required based on functional needs, including but not limited to response time, safety and positive actuation that commenced construction, modification or reconstruction after September 18, 2015?

☐ Yes ☒ No

Please list approximate number.

Centrifugal Compressor Data Sheet(s)

ATTACHMENT Q – CENTRIFUGAL COMPRESSOR DATA SHEET

Are there any centrifugal compressors at this facility that commenced construction, modification or reconstruction after August 23, 2011, and on or before September 18, 2015?

☐ Yes ☒ No

Please list:

Emission Unit ID#	Compressor Description

Are there any centrifugal compressors at this facility that commenced construction, modification or reconstruction after September 18, 2015?

☐ Yes ☒ No

Please list:

Emission Unit ID#	Compressor Description

ATTACHMENT R

Reciprocating Compressor Data Sheet(s)

ATTACHMENT R – RECIPROCATING COMPRESSOR DATA SHEET

Are there any reciprocating compressors at this facility that commenced construction, modification or reconstruction after August 23, 2011, and on or before September 18, 2015?

☐ Yes ☒ No

Please list:

Emission Unit ID#	Compressor Description

Are there any reciprocating compressors at this facility that commenced construction, modification or reconstruction after September 18, 2015?

☐ Yes ☒ No

Please list:

Emission Unit ID#	Compressor Description

ATTACHMENT S

Blowdown and Pigging Operation Data Sheet(s)

ATTACHMENT S – BLOWDOWN AND PIGGING OPERATIONS DATA SHEET

Will there be any blowdown and pigging operations that occur at this facility?

☒ Yes ☐ No

Please list:

Type of Event	# of Events (event/yr)	Amount Vented per event (scf/event)	MW of vented gas (lb/lb-mol)	Total Emissions (ton/yr)	VOC weight fraction	VOC emissions (ton/yr)
Compressor Blowdown	**These emissions are accounted for in the emissions calculations in the 'Miscellaneous Gas Venting' calculations, which include all facility blowdowns and pigging operations.**					
Compressor Startup						
Plant Shutdown						
Low Pressure Pig Venting						
High Pressure Pig Venting						

Type of Event	# of Events (event/yr)	Amount Vented per event (scf/event)	MW of vented gas (lb/lb-mol)	Total Emissions (ton/yr)	HAP weight fraction	HAP emissions (ton/yr)
Compressor Blowdown	**These emissions are accounted for in the emissions calculations in the 'Miscellaneous Gas Venting' calculations, which include all facility blowdowns and pigging operations.**					
Compressor Startup						
Plant Shutdown						
Low Pressure Pig Venting						
High Pressure Pig Venting						

Air Pollution Control Device Data Sheet(s)

ATTACHMENT T – AIR POLLUTION CONTROL DEVICE / EMISSION REDUCTION DEVICE SHEETS – NOT APPLICABLE

Complete the applicable air pollution control device sheets for each flare, vapor combustor, thermal oxidizer, condenser, adsorption system, vapor recovery unit, BTEX Eliminator, Reboiler with and without Glow Plug, etc. at the facility. Use extra pages if necessary.

Emissions calculations must be performed using the most conservative control device efficiency.

The following five (5) rows are only to be completed if registering an alternative air pollution control device.	
Emission Unit ID: N/A	Make/Model:
Primary Control Device ID:	Make/Model:
Control Efficiency (%):	APCD/ERD Data Sheet Completed: ☐ Yes ☐ No
Secondary Control Device ID:	Make/Model:
Control Efficiency (%):	APCD/ERD Data Sheet Completed: ☐ Yes ☐ No

VAPOR COMBUSTION
(Including Enclosed Combustors)

General Information

Control Device ID#: N/A	Installation Date: ☐ New ☐ Modified ☐ Relocated	
Maximum Rated Total Flow Capacity scfh scfd	Maximum Design Heat Input (from mfg. spec sheet) MMBTU/hr	Design Heat Content BTU/scf

Control Device Information

Type of Vapor Combustion Control?

☐ Enclosed Combustion Device ☐ Elevated Flare ☐ Ground Flare
☐ Thermal Oxidizer

Manufacturer: Model:	Hours of operation per year?

List the emission units whose emissions are controlled by this vapor control device (Emission Point ID#)

Emission Unit ID#	Emission Source Description	Emission Unit ID#	Emission Source Description

If this vapor combustor controls emissions from more than six (6) emission units, please attach additional pages.

Assist Type (Flares only)	Flare Height	Tip Diameter	Was the design per §60.18?
☐ Steam ☐ Air ☐ Pressure ☐ Non	feet	feet	☐ Yes ☐ No Provide determination.

Waste Gas Information

Maximum Waste Gas Flow Rate (scfm)	Heat Value of Waste Gas Stream BTU/ft^3	Exit Velocity of the Emissions Stream (ft/s)

Provide an attachment with the characteristics of the waste gas stream to be burned.

Pilot Gas Information

Number of Pilot Lights	Fuel Flow Rate to Pilot Flame per Pilot scfh	Heat Input per Pilot BTU/hr	Will automatic re-ignition be used? ☐ Yes ☐ No

If automatic re-ignition is used, please describe the method.

Is pilot flame equipped with a monitor to detect the presence of the flame? ☐ Yes ☐ No	If Yes, what type? ☐ Thermocouple ☐ Infrared ☐ Ultraviolet ☐ Camera ☐ Other:

Describe all operating ranges and maintenance procedures required by the manufacturer to maintain the warranty. *(If unavailable, please indicate).*

Additional information attached? ☐ Yes ☐ No
Please attach copies of manufacturer's data sheets, drawings, flame demonstration per §60.18 or §63.11(b) and performance testing.

CONDENSER		
General Information		
Control Device ID#: N/A	Installation Date: ☐ New ☐ Modified ☐ Relocated	
Manufacturer:	Model:	Control Device Name:
Control Efficiency (%):		
Manufacturer's required temperature range for control efficiency. °F		
Describe the warning and/or alarm system that protects against operation when unit is not meeting the design requirements:		
Describe all operating ranges and maintenance procedures required by the manufacturer to maintain the warranty.		
Additional information attached? ☐ Yes ☐ No Please attach copies of manufacturer's data sheets.		
Is condenser routed to a secondary APCD or ERD? ☐ Yes ☐ No		

ADSORPTION SYSTEM

General Information	
Control Device ID#: N/A	Installation Date: ☐ New ☐ Modified ☐ Relocated
Manufacturer:	Model: / Control Device Name:
Design Inlet Volume: scfm	Adsorbent charge per adsorber vessel and number of adsorber vessels:
Length of Mass Transfer Zone supplied by the manufacturer:	Adsorber diameter: ft Adsorber area: ft^2
Adsorbent type and physical properties:	Overall Control Efficiency (%):
Working Capacity of Adsorbent (%):	

Operating Parameters	
Inlet volume: scfm @ °F	
Adsorption time per adsorption bed (life expectancy):	Breakthrough Capacity (lbs of VOC/100 lbs of adsorbent):
Temperature range of carbon bed adsorber °F - °F	

Control Device Technical Data	
Pollutants Controlled	Manufacturer's Guaranteed Control Efficiency (%)

Describe the warning and/or alarm system that protects against operation when unit is not meeting the design requirements:
Has the control device been tested by the manufacturer and certified?
Describe all operating ranges and maintenance procedures required by the manufacturer to maintain the warranty.
Additional information attached? ☐ Yes ☐ No Please attach copies of manufacturer's data sheets, drawings, and performance testing.

VAPOR RECOVERY UNIT

General Information

Emission Unit ID#: N/A	Installation Date: ☐ New ☐ Modified ☐ Relocated

Device Information

Manufacturer:
Model:

List the emission units whose emissions are controlled by this vapor recovery unit (Emission Point ID#)

Emission Unit ID#	Emission Source Description	Emission Unit ID#	Emission Source Description

If this vapor recovery unit controls emissions from more than six (6) emission units, please attach additional pages.

Additional information attached? ☐ Yes ☐ No
Please attach copies of manufacturer's data sheets, drawings, and performance testing.

The registrant may claim a capture and control efficiency of 95 % (which accounts for 5% downtime) for the vapor recovery unit.

The registrant may claim a capture and control efficiency of 98% if the VRU has a backup flare that meet the requirements of Section 8.1.2 of this general permit.

The registrant may claim a capture and control efficiency of 98% if the VRU has a backup VRU.

ATTACHMENT U

Emission Calculations

Company Name: Superior Appalachian Pipeline, LLC
Facility Name: Preston Compressor Station
Project Description: G35-D Application

Facility-Wide Emission Summary - Controlled

Storage Tanks:	2	per site
Line Heaters:	0	per site
Catalytic Heaters:	2	per site
Dehy Reboilers:	1	per site
Glycol Dehydrators:	1	per site
Dehy Drip Tanks:	0	per site
Dehy Combustors:	0	per site
Compressors:	1	per site
High Pressure Separators:	4	per site
Length of lease road:	400	feet

Carbon equivalent emissions (CO_2e) are based on the following Global Warming Potentials (GWP) from 40 CFR Part 98, Table A-1:

CH_4	25
N_2O	298

Emission Point ID #	Emission Source ID#s	Emission Source Description	NO_x		CO		VOC		SO_2		PM_{10}		$PM_{2.5}$		CH_4		CO_2e	
			lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
CE-2A	CE-2A	Compressor Engine	1.87	8.21	1.52	6.65	0.58	2.54	2.1E-03	0.01	0.04	0.16	0.04	0.16	2.73	11.96	509.79	2,232.88
GE-1	GE-1	Emergency Generator Engine	2.05	0.51	4.83	1.21	2.07	0.52	4.8E-04	1.2E-04	0.02	4.0E-03	0.02	4.0E-03	0.00	0.00	95.55	23.89
RSV-1	RSV-1	Dehydration Unit Still Vent	---	---	---	---	0.13	0.55	---	---	---	---	---	---	28.85	126.36	721.26	3,159.11
RBV-1A	RBV-1A	Dehydration Unit Reboiler	0.02	0.09	0.02	0.07	1.1E-03	4.7E-03	1.2E-04	5.1E-04	1.5E-03	0.01	1.5E-03	0.01	4.4E-04	1.9E-03	23.42	102.60
T01	T01	Waste Fluids Tank	---	---	---	---	0.05	0.23	---	---	---	---	---	---	1.4E-03	0.01	0.03	0.15
T02	T02	Waste Fluids Tank	---	---	---	---	0.05	0.23	---	---	---	---	---	---	1.4E-03	0.01	0.03	0.15
T03 - T05	T03 - T05	De minimis storage tanks	---	---	---	---	9.1E-05	4.0E-04	---	---	---	---	---	---	---	---	---	---
L01	L01	Liquid Loading	---	---	---	---	0.09	0.02	---	---	---	---	---	---	---	---	---	---
---	---	Catalytic Heaters	6.9E-04	3.0E-03	5.8E-04	2.5E-03	3.8E-05	1.7E-04	4.1E-06	1.8E-05	5.2E-05	2.3E-04	5.2E-05	2.3E-04	1.5E-05	6.8E-05	3.9E-04	1.7E-03
---	---	Fugitives	---	---	---	---	---	0.66	---	---	---	---	---	---	---	22.00	---	549.89
---	---	Haul Roads	---	---	---	---	---	---	---	---	---	0.01	---	1.0E-03	---	---	---	---
Facility Total			3.94	8.81	6.37	7.93	2.97	4.76	2.7E-03	0.01	0.05	0.18	0.05	0.17	31.59	160.33	1,350.10	6,068.57
Facility Total (excluding fugitive emissions)			3.94	8.81	6.37	7.93	2.97	4.10	2.7E-03	0.01	0.05	0.17	0.05	0.17	31.59	138.34	1,350.10	5,518.78

Emission Point ID #	Emission Source ID#s	Emission Source Description	Formaldehyde		Benzene		Toluene		Ethylbenzene		Xylenes		n-Hexane		Total BTEX		Total HAP	
			lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
CE-2A	CE-2A	Compressor Engine	0.26	1.15	1.6E-03	7.0E-03	1.5E-03	6.5E-03	1.4E-04	6.3E-04	6.7E-04	2.9E-03	4.1E-03	0.02	3.9E-03	0.02	0.33	1.46
GE-1	GE-1	Emergency Generator Engine	0.02	4.2E-03	2.0E-05	5.1E-06	1.1E-05	4.6E-05	1.6E-04	4.0E-05	<0.01	<0.01	<0.01	<0.01	1.9E-04	9.1E-05	0.03	0.01
RSV-1	RSV-1	Dehydration Unit Still Vent	---	---	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.13	<0.01	<0.01	0.03	0.13
RBV-1A	RBV-1A	Dehydration Unit Reboiler	1.5E-05	6.4E-05	4.1E-07	1.8E-06	6.7E-07	2.9E-06	---	---	---	---	3.5E-04	1.5E-03	1.1E-06	4.7E-06	3.7E-04	1.6E-03
T01	T01	Waste Fluids Tank	---	---	4.6E-04	2.0E-03	2.3E-04	1.0E-03	<0.01	<0.01	<0.01	<0.01	3.0E-03	0.01	6.8E-04	3.0E-03	4.6E-03	0.02
T02	T02	Waste Fluids Tank	---	---	4.6E-04	2.0E-03	2.3E-04	1.0E-03	<0.01	<0.01	<0.01	<0.01	3.0E-03	0.01	6.8E-04	3.0E-03	4.6E-03	0.02
T03 - T05	T03 - T05	De minimis storage tanks	---	---	---	---	---	---	---	---	---	---	---	---	---	---	9.1E-05	4.0E-04
L01	L01	Liquid Loading	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.01	2.3E-03
---	---	Catalytic Heaters	5.1E-07	2.3E-06	1.4E-08	6.3E-08	2.3E-08	1.0E-07	---	---	---	---	1.2E-05	5.4E-05	3.8E-08	1.7E-07	1.3E-05	5.7E-05
---	---	Fugitives	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
---	---	Haul Roads	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Facility Total			0.28	1.15	2.5E-03	0.01	2.0E-03	0.01	3.0E-04	6.7E-04	6.7E-04	2.9E-03	0.04	0.18	0.01	0.02	0.41	1.64
Facility Total (excluding fugitive emissions)			0.28	1.15	2.5E-03	0.01	2.0E-03	0.01	3.0E-04	6.7E-04	6.7E-04	2.9E-03	0.04	0.18	0.01	0.02	0.41	1.64

Company Name:	Superior Appalachian Pipeline, LLC
Facility Name:	Preston Compressor Station
Project Description:	G35-D Application

Compressor Engine

Engine Information:

Source Designation:	CE-2A
Manufacturer:	Caterpillar
Model No.:	G3408TALE
Stroke Cycle:	4-stroke
Type of Burn:	Lean
Rated Horsepower (bhp):	425

Engine Fuel Information:

Fuel Type:	Natural Gas
Higher Heating Value (HHV) (Btu/scf):	1,021
Specific Fuel Consumption (Btu/bhp-hr):	8,588
Maximum Fuel Consumption at 100% Load (scf/hr):	3,574
Heat Input (MMBtu/hr):	3.65
Potential Fuel Consumption (MMBtu/yr):	31,973
Max. Fuel Consumption at 100% (MMscf/hr):	0.0036
Max. Fuel Consumption (MMscf/yr):	31.3
Max. Annual Hours of Operation (hr/yr):	8,760

Engine Emissions Data:

Pollutant	Emission Factor	Units	Maximum Potential Emissions		Estimation Basis / Emission Factor Source
			lbs/hr	tpy	
NO_x	1.87	lb/hr	1.87	8.21	Manufacturer/Vendor
VOC (excludes HCHO)	0.32	lb/hr	0.32	1.40	Manufacturer/Vendor
VOC (includes HCHO)	---	---	0.58	2.54	VOC + HCHO
CO	1.52	lb/hr	1.52	6.65	Manufacturer/Vendor
SO_x	0.001	lb/MMBtu	2.15E-03	0.01	AP-42, Table 3.2-2 (Jul-2000)
PM_{10}	0.01	lb/MMBtu	0.04	0.16	AP-42, Table 3.2-2 (Jul-2000)
$PM_{2.5}$	0.01	lb/MMBtu	0.04	0.16	AP-42, Table 3.2-2 (Jul-2000)
Formaldehyde (HCHO)	0.26	lb/hr	0.26	1.15	Manufacturer/Vendor
GHG (CO_2e)	See Table Below		510	2,233	40 CFR 98, Tables C-1 & C-2
Other (Total HAP)	See Table Below		0.33	1.46	AP-42, Table 3.2-2 (Jul-2000)

Notes:

1. PM_{10} and $PM_{2.5}$ are total values (filterable + condensable).
2. GHG (CO_2e) is carbon dioxide equivalent, which is the summation of CO_2 (GWP = 1) + CH_4 (GWP = 25) + N_2O (GWP = 298).
3. Total HAP is the summation of all hazardous air pollutants for which there is a published emission factor for this source type.

Company Name: Superior Appalachian Pipeline, LLC
Facility Name: Preston Compressor Station
Project Description: G35-D Application

Compressor Engine

Greenhouse Gas (GHG) & Hazardous Air Pollutant (HAP) Emissions Calculations:

Pollutant	Emission Factor	Units	Maximum Potential Emissions		Estimation Basis / Emission Factor Source
			lbs/hr	tpy	
GHGs:					
CO_2	441.30	lb/hr	441.30	1,932.89	Manufacturer/Vendor
CH_4	2.73	lb/hr	2.73	11.96	Manufacturer/Vendor
N_2O	0.0001	kg/MMBtu	0.00	0.00	40 CFR 98, Table C-2
GHG (CO_2e)			510	2,233	
Organic HAPs:					
1,1,2,2-Tetrachloroethane	4.00E-05	lb/MMBtu	1.5E-04	6.4E-04	AP-42, Table 3.2-2 (Jul-2000)
1,1,2-Trichloroethane	3.18E-05	lb/MMBtu	1.2E-04	5.1E-04	AP-42, Table 3.2-2 (Jul-2000)
1,3-Butadiene	2.67E-04	lb/MMBtu	9.7E-04	4.3E-03	AP-42, Table 3.2-2 (Jul-2000)
1,3-Dichloropropene	2.64E-05	lb/MMBtu	9.6E-05	4.2E-04	AP-42, Table 3.2-2 (Jul-2000)
2-Methylnapthalene	3.32E-05	lb/MMBtu	1.2E-04	5.3E-04	AP-42, Table 3.2-2 (Jul-2000)
2,2,4-Trimethylpentane	2.50E-04	lb/MMBtu	9.1E-04	4.0E-03	AP-42, Table 3.2-2 (Jul-2000)
Acenaphthene	1.25E-06	lb/MMBtu	4.6E-06	2.0E-05	AP-42, Table 3.2-2 (Jul-2000)
Acenaphthylene	5.53E-06	lb/MMBtu	2.0E-05	8.8E-05	AP-42, Table 3.2-2 (Jul-2000)
Acetaldehyde	8.36E-03	lb/MMBtu	3.1E-02	1.3E-01	AP-42, Table 3.2-2 (Jul-2000)
Acrolein	5.14E-03	lb/MMBtu	1.9E-02	8.2E-02	AP-42, Table 3.2-2 (Jul-2000)
Benzene	4.40E-04	lb/MMBtu	1.6E-03	7.0E-03	AP-42, Table 3.2-2 (Jul-2000)
Benzo(b)fluoranthene	1.66E-07	lb/MMBtu	6.1E-07	2.7E-06	AP-42, Table 3.2-2 (Jul-2000)
Benzo(e)pyrene	4.15E-07	lb/MMBtu	1.5E-06	6.6E-06	AP-42, Table 3.2-2 (Jul-2000)
Benzo(g,h,i)perylene	4.14E-07	lb/MMBtu	1.5E-06	6.6E-06	AP-42, Table 3.2-2 (Jul-2000)
Biphenyl	2.12E-04	lb/MMBtu	7.7E-04	3.4E-03	AP-42, Table 3.2-2 (Jul-2000)
Carbon Tetrachloride	3.67E-05	lb/MMBtu	1.3E-04	5.9E-04	AP-42, Table 3.2-2 (Jul-2000)
Chlorobenzene	3.04E-05	lb/MMBtu	1.1E-04	4.9E-04	AP-42, Table 3.2-2 (Jul-2000)
Chloroform	2.85E-05	lb/MMBtu	1.0E-04	4.6E-04	AP-42, Table 3.2-2 (Jul-2000)
Chrysene	6.93E-07	lb/MMBtu	2.5E-06	1.1E-05	AP-42, Table 3.2-2 (Jul-2000)
Ethylbenzene	3.97E-05	lb/MMBtu	1.4E-04	6.3E-04	AP-42, Table 3.2-2 (Jul-2000)
Ethylene Dibromide	4.43E-05	lb/MMBtu	1.6E-04	7.1E-04	AP-42, Table 3.2-2 (Jul-2000)
Fluoranthene	1.11E-06	lb/MMBtu	4.1E-06	1.8E-05	AP-42, Table 3.2-2 (Jul-2000)
Fluorene	5.67E-06	lb/MMBtu	2.1E-05	9.1E-05	AP-42, Table 3.2-2 (Jul-2000)
Methanol	2.50E-03	lb/MMBtu	9.1E-03	4.0E-02	AP-42, Table 3.2-2 (Jul-2000)
Methylene Chloride	2.00E-05	lb/MMBtu	7.3E-05	3.2E-04	AP-42, Table 3.2-2 (Jul-2000)
n-Hexane	1.11E-03	lb/MMBtu	4.1E-03	1.8E-02	AP-42, Table 3.2-2 (Jul-2000)
Naphthalene	7.44E-05	lb/MMBtu	2.7E-04	1.2E-03	AP-42, Table 3.2-2 (Jul-2000)
PAH	2.69E-05	lb/MMBtu	9.8E-05	4.3E-04	AP-42, Table 3.2-2 (Jul-2000)
Phenanthrene	1.04E-05	lb/MMBtu	3.8E-05	1.7E-04	AP-42, Table 3.2-2 (Jul-2000)
Phenol	2.40E-05	lb/MMBtu	8.8E-05	3.8E-04	AP-42, Table 3.2-2 (Jul-2000)
Pyrene	1.36E-06	lb/MMBtu	5.0E-06	2.2E-05	AP-42, Table 3.2-2 (Jul-2000)
Styrene	2.36E-05	lb/MMBtu	8.6E-05	3.8E-04	AP-42, Table 3.2-2 (Jul-2000)
Tetrachloroethane	2.48E-06	lb/MMBtu	9.1E-06	4.0E-05	AP-42, Table 3.2-2 (Jul-2000)
Toluene	4.08E-04	lb/MMBtu	1.5E-03	6.5E-03	AP-42, Table 3.2-2 (Jul-2000)
Vinyl Chloride	1.49E-05	lb/MMBtu	5.4E-05	2.4E-04	AP-42, Table 3.2-2 (Jul-2000)
Xylene	1.84E-04	lb/MMBtu	6.7E-04	2.9E-03	AP-42, Table 3.2-2 (Jul-2000)
Total HAP (Including HCHO)			0.33	1.46	

Company Name: Superior Appalachian Pipeline, LLC
Facility Name: Preston Compressor Station
Project Description: G35-D Application

Generator Engine

Engine Information:

Source Designation:	GE-1
Manufacturer:	General Motors
Model No.:	5.7L Industrial
Stroke Cycle:	4-stroke
Type of Burn:	Rich
Rated Horsepower (bhp):	93
Rated Power (kW):	69

Engine Fuel Information:

Fuel Type:	Natural Gas
Higher Heating Value (HHV) (Btu/scf):	1,021
Specific Fuel Consumption (Btu/bhp-hr):	8,773
Maximum Fuel Consumption at 100% Load (scf/hr):	799
Heat Input (MMBtu/hr):	0.82
Potential Fuel Consumption (MMBtu/yr):	408
Max. Fuel Consumption at 100% (MMscf/hr):	0.0008
Max. Fuel Consumption (MMscf/yr):	0.4
Max. Annual Hours of Operation (hr/yr):	500

Engine Emissions Data:

Pollutant	Emission Factor	Units	Maximum Potential Emissions		Estimation Basis / Emission Factor Source
			lbs/hr	tpy	
NO_X	13.4	g/kW-hr	2.05	0.51	EPA Certificate of Conformity
VOC (excludes HCHO)	13.4	g/kW-hr	2.05	0.51	EPA Certificate of Conformity
VOC (includes HCHO)	---	---	2.07	0.52	VOC + HCHO
CO	31.6	g/kW-hr	4.83	1.21	EPA Cert. of Conf. (Test Data)
SO_X	0.001	lb/MMBtu	4.80E-04	1.20E-04	AP-42, Table 3.2-3 (Aug-2000)
PM_{10}	0.02	lb/MMBtu	0.02	3.96E-03	AP-42, Table 3.2-3 (Aug-2000)
$PM_{2.5}$	0.02	lb/MMBtu	0.02	3.96E-03	AP-42, Table 3.2-3 (Aug-2000)
Formaldehyde (HCHO)	0.02	lb/MMBtu	0.02	4.18E-03	AP-42, Table 3.2-3 (Aug-2000)
GHG (CO_2e)	See Table Below		96	24	40 CFR 98, Tables C-1 & C-2
Other (Total HAP)	See Table Below		0.03	0.01	AP-42, Table 3.2-3 (Aug-2000)

Notes:

1. PM_{10} and $PM_{2.5}$ are total values (filterable + condensable).
2. GHG (CO_2e) is carbon dioxide equivalent, which is the summation of CO_2 (GWP = 1) + CH_4 (GWP = 25) + N_2O (GWP = 298).
3. Total HAP is the summation of all hazardous air pollutants for which there is a published emission factor for this source type.
4. Per previous requirement of permit engineer, the CO rate corresponds to the highest test result in the Summary Report for the EPA Certificate of Conformity.
5. The VOC and NO_X emissions rates are conservative, as they utilize the certification value for the 'NMHC + NO_X' category on the EPA Certificate of Conformity.

Company Name: Superior Appalachian Pipeline, LLC
Facility Name: Preston Compressor Station
Project Description: G35-D Application

Generator Engine

Greenhouse Gas (GHG) & Hazardous Air Pollutant (HAP) Emissions Calculations:

Pollutant	Emission Factor	Units	Maximum Potential Emissions		Estimation Basis / Emission Factor Source
			lbs/hr	tpy	
GHGs:					
CO_2	53.06	kg/MMBtu	95.46	23.86	40 CFR 98, Table C-1
CH_4	0.001	kg/MMBtu	1.8E-03	4.5E-04	40 CFR 98, Table C-2
N_2O	0.0001	kg/MMBtu	1.8E-04	4.5E-05	40 CFR 98, Table C-2
GHG (CO_2e)			**96**	**24**	
Organic HAPs:					
1,1,2,2-Tetrachloroethane	2.53E-05	lb/MMBtu	2.1E-05	5.2E-06	AP-42, Table 3.2-3 (Aug-2000)
1,1,2-Trichloroethane	1.53E-05	lb/MMBtu	1.2E-05	3.1E-06	AP-42, Table 3.2-3 (Aug-2000)
1,3-Butadiene	6.63E-04	lb/MMBtu	5.4E-04	1.4E-04	AP-42, Table 3.2-3 (Aug-2000)
1,3-Dichloropropene	1.27E-05	lb/MMBtu	1.0E-05	2.6E-06	AP-42, Table 3.2-3 (Aug-2000)
Acetaldehyde	2.79E-03	lb/MMBtu	2.3E-03	5.7E-04	AP-42, Table 3.2-3 (Aug-2000)
Acrolein	2.63E-03	lb/MMBtu	2.1E-03	5.4E-04	AP-42, Table 3.2-3 (Aug-2000)
Benzene	1.58E-03	lb/MMBtu	1.3E-03	3.2E-04	AP-42, Table 3.2-3 (Aug-2000)
Carbon Tetrachloride	1.77E-05	lb/MMBtu	1.4E-05	3.6E-06	AP-42, Table 3.2-3 (Aug-2000)
Chlorobenzene	1.29E-05	lb/MMBtu	1.1E-05	2.6E-06	AP-42, Table 3.2-3 (Aug-2000)
Chloroform	1.37E-05	lb/MMBtu	1.1E-05	2.8E-06	AP-42, Table 3.2-3 (Aug-2000)
Ethylbenzene	2.48E-05	lb/MMBtu	2.0E-05	5.1E-06	AP-42, Table 3.2-3 (Aug-2000)
Ethylene Dibromide	2.13E-05	lb/MMBtu	1.7E-05	4.3E-06	AP-42, Table 3.2-3 (Aug-2000)
Methanol	3.06E-03	lb/MMBtu	2.5E-03	6.2E-04	AP-42, Table 3.2-3 (Aug-2000)
Methylene Chloride	4.12E-05	lb/MMBtu	3.4E-05	8.4E-06	AP-42, Table 3.2-3 (Aug-2000)
Naphthalene	9.71E-05	lb/MMBtu	7.9E-05	2.0E-05	AP-42, Table 3.2-3 (Aug-2000)
PAH	1.41E-04	lb/MMBtu	1.2E-04	2.9E-05	AP-42, Table 3.2-3 (Aug-2000)
Styrene	1.19E-05	lb/MMBtu	9.7E-06	2.4E-06	AP-42, Table 3.2-3 (Aug-2000)
Toluene	5.58E-04	lb/MMBtu	4.6E-04	1.1E-04	AP-42, Table 3.2-3 (Aug-2000)
Vinyl Chloride	7.18E-06	lb/MMBtu	5.9E-06	1.5E-06	AP-42, Table 3.2-3 (Aug-2000)
Xylene	1.95E-04	lb/MMBtu	1.6E-04	4.0E-05	AP-42, Table 3.2-3 (Aug-2000)
Total HAP (including HCHO)			**0.03**	**0.01**	

Company Name:	**Superior Appalachian Pipeline, LLC**
Facility Name:	**Preston Compressor Station**
Project Description:	**G35-D Application**

Glycol Dehydrator

Source Designation:	**RSV-1**
Throughput Rating (MMSCFD):	7
Tower Temperature (deg F):	45
Tower Pressure (psig):	900
Maximum Glycol Pump Rate (gpm):	1.5
Potential Annual Hours of Operation (hr/yr):	8,760

GRI-GLYCalc Version 4.0 - EMISSIONS SUMMARY [1]
Uncontrolled Regenerator Emissions

Pollutant	(lbs/hr)	(lbs/day)	(tons/yr)
Methane	24.0420	577.007	105.3038
Ethane	1.0615	25.476	4.6493
Propane	0.0606	1.455	0.2655
Isobutane	0.0035	0.083	0.0152
n-Butane	0.0104	0.250	0.0457
Isopentane	0.0027	0.064	0.0116
n-Pentane	0.0033	0.079	0.0144
n-Hexane*	0.0251	0.602	0.1099
Total Emissions	25.2090	605.016	110.4153
Total Hydrocarbon Emissions	25.2090	605.016	110.4153
Total VOC Emissions	0.1055	2.533	0.4623
Total HAP Emissions	0.0251	0.602	0.1099

Total Emission Rate [2]
Uncontrolled Regenerator Emissions

Pollutant	(lbs/hr)	(lbs/day)	(tons/yr)
Methane	28.8504	692.408	126.3646
Ethane	1.2738	30.571	5.5792
Propane	0.0727	1.746	0.3186
Isobutane	0.0042	0.100	0.0182
n-Butane	0.0125	0.300	0.0548
Isopentane	0.0032	0.077	0.0139
n-Pentane	0.0040	0.095	0.0173
n-Hexane*	0.0301	0.722	0.1319
Total Emissions	30.2508	726.019	132.4984
Total Hydrocarbon Emissions	30.2508	726.019	132.4984
Total VOC Emissions	0.1266	3.040	0.5548
Total HAP Emissions	0.0301	0.722	0.1319

* HAPs

1. Based on GRI-GLYCalc 4.0 run at maximum operating conditions. The unit utilizes an energy-exchange glycol pump.
2. Totals conservatively include a 20% compliance margin to account for minor variations in inlet gas composition that may occur periodically.

Company Name:	**Superior Appalachian Pipeline, LLC**
Facility Name:	**Preston Compressor Station**
Project Description:	**G35-D Application**

Reboiler

Source Designation:	**RBV-1A**
Fuel Used:	Natural Gas
Higher Heating Value (HHV) (Btu/scf):	1,021
Heat Input (MMBtu/hr):	0.20
Fuel Consumption (MMscf/hr):	1.96E-04
Potential Annual Hours of Operation (hr/yr):	8,760

Criteria and Manufacturer Specific Pollutant Emission Rates:

Pollutant	Emission Factor (lb/MMscf)[1]	Potential Emissions (lb/hr)[2]	Potential Emissions (tons/yr)[2]
NO_x	100	0.02	0.09
CO	84	0.02	0.07
VOC	5.5	1.1E-03	4.7E-03
SO_2	0.6	1.2E-04	5.1E-04
PM Total	7.6	1.5E-03	0.01
PM Condensable	5.7	1.1E-03	4.9E-03
PM_{10} (Filterable)	1.9	3.7E-04	1.6E-03
$PM_{2.5}$ (Filterable)	1.9	3.7E-04	1.6E-03
Lead	5.00E-04	9.8E-08	4.3E-07
CO_2[4]	117.0	23.40	102.49
CH_4[4]	2.21E-03	4.4E-04	1.9E-03
N_2O[4]	2.21E-04	4.4E-05	1.9E-04

Company Name: Superior Appalachian Pipeline, LLC
Facility Name: Preston Compressor Station
Project Description: G35-D Application

Reboiler

Hazardous Air Pollutant (HAP) Potential Emissions:

Pollutant	Emission Factor (lb/MMscf)[1]	Potential Emissions (lb/hr)[2]	Potential Emissions (tons/yr)[3]
HAPs:			
Methylnaphthalene (2-)	2.4E-05	4.7E-09	2.1E-08
3-Methylchloranthrene	1.8E-06	3.5E-10	1.5E-09
7,12-Dimethylbenz(a)anthracene	1.6E-05	3.1E-09	1.4E-08
Acenaphthene	1.8E-06	3.5E-10	1.5E-09
Acenaphthylene	1.8E-06	3.5E-10	1.5E-09
Anthracene	2.4E-06	4.7E-10	2.1E-09
Benz(a)anthracene	1.8E-06	3.5E-10	1.5E-09
Benzene	2.1E-03	4.1E-07	1.8E-06
Benzo(a)pyrene	1.2E-06	2.4E-10	1.0E-09
Benzo(b)fluoranthene	1.8E-06	3.5E-10	1.5E-09
Benzo(g,h,I)perylene	1.2E-06	2.4E-10	1.0E-09
Benzo(k)fluoranthene	1.8E-06	3.5E-10	1.5E-09
Chrysene	1.8E-06	3.5E-10	1.5E-09
Dibenzo(a,h) anthracene	1.2E-06	2.4E-10	1.0E-09
Dichlorobenzene	1.2E-03	2.4E-07	1.0E-06
Fluoranthene	3.0E-06	5.9E-10	2.6E-09
Fluorene	2.8E-06	5.5E-10	2.4E-09
Formaldehyde	7.5E-02	1.5E-05	6.4E-05
Hexane	1.8E+00	3.5E-04	1.5E-03
Indo(1,2,3-cd)pyrene	1.8E-06	3.5E-10	1.5E-09
Naphthalene	6.1E-04	1.2E-07	5.2E-07
Phenanthrene	1.7E-05	3.3E-09	1.5E-08
Pyrene	5.0E-06	9.8E-10	4.3E-09
Toluene	3.4E-03	6.7E-07	2.9E-06
Arsenic	2.0E-04	3.9E-08	1.7E-07
Beryllium	1.2E-05	2.4E-09	1.0E-08
Cadmium	1.1E-03	2.2E-07	9.4E-07
Chromium	1.4E-03	2.7E-07	1.2E-06
Cobalt	8.4E-05	1.6E-08	7.2E-08
Manganese	3.8E-04	7.4E-08	3.3E-07
Mercury	2.6E-04	5.1E-08	2.2E-07
Nickel	2.1E-03	4.1E-07	1.8E-06
Selenium	2.4E-05	4.7E-09	2.1E-08
Total HAP		**3.7E-04**	**1.6E-03**

[1] Emission factors from AP-42 Section 1.4 "Natural Gas Combustion" Tables 1.4-1, 1.4-2, & 1.4-3

[2] Emission Rate (lb/hr) = Rated Capacity (MMscf/hr) x Emission Factor (lb/MMscf).

[3] Annual Emissions $(tons/yr)_{Potential}$ = $(lb/hr)_{Emissions}$ x (Maximum Allowable Operating Hours, 8760 hr/yr) x (1 ton/2000 lb).

[4] GHG Emission factors from Tables C-1 and C-2, 40 CFR 98, Subpart C.

Company Name: Superior Appalachian Pipeline, LLC
Facility Name: Preston Compressor Station
Project Description: G35-D Application

Storage Vessels

Operational Hours 8,760 hrs/yr

Storage Tanks - Uncontrolled [1,2,3]

Source Designation:	T01		T02		T03		T04		T05	
Contents:	Waste Fluids		Waste Fluids		Engine Oil		Compressor Oil		Triethylene Glycol	
Number:	1 tank(s)		1 tank(s)		1 tank(s)		1 tank(s)		1 tank(s)	
Capacity:	8,820 gal (each)		8,820 gal (each)		500 gal (each)		300 gal (each)		300 gal (each)	
Throughput:	105,840 gal (each)		105,840 gal (each)		6,000 gal (each)		3,600 gal (each)		3,600 gal (each)	
Condensate Throughput:	0.1 bbl/day (each)		0.1 bbl/day (each)		---		---		---	
Emissions (per tank)	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**
VOC	0.052	0.229	0.052	0.229	4.5E-05	2.0E-04	4.5E-05	2.0E-04	2.3E-06	1.0E-05
HAP	0.005	0.020	0.005	0.020	4.5E-05	2.0E-04	4.5E-05	2.0E-04	2.3E-06	1.0E-05
Benzene	4.6E-04	0.002	4.6E-04	0.002	---	---	---	---	---	---
Toluene	2.3E-04	0.001	2.3E-04	0.001	---	---	---	---	---	---
Ethylbenzene	<0.001	<0.001	<0.001	<0.001	---	---	---	---	---	---
Xylene	<0.001	<0.001	<0.001	<0.001	---	---	---	---	---	---
n-Hexane	0.003	0.013	0.003	0.013	---	---	---	---	---	---
Methane	0.001	0.006	0.001	0.006	---	---	---	---	---	---

[1] Uncontrolled emissions calculation using E&P TANK v2.0 for tanks with flashing; emissions include working, breathing and flashing losses. Conservatively assumes 1% condensate in waste fluids.
[2] Uncontrolled emissions calculation using EPA Tanks 4.0.9d for tanks without flashing; emissions include working and breathing losses.
[3] Conservatively assumes one turnover per month, per tank.

Company Name: Superior Appalachian Pipeline, LLC
Facility Name: Preston Compressor Station
Project Description: G35-D Application

Liquid Loading

Throughput 211,680 gal/yr
Capture Efficiency 0% non-tested tanker trucks
Control Efficiency 0% Combustor destruction efficiency

Liquid Loading Emissions

Source ID:	L01

Uncontrolled Loading Losses: L_L (lb/10^3 gal) = 12.46 (SPM)/T
Controlled Loading Losses: L_L (lb/10^3 gal) = 12.46 (SPM)/T * (1 - Capture Efficiency * Control Efficiency)

Parameter	Value	Description
S	1.45	Saturation factor for "Splash Loading: dedicated normal service" (AP-42 Table 5.2-1)
Capture Efficiency	0%	Capture Efficiency
Control Efficiency	0%	Control Efficiency
P	0.3240	true vapor pressure of liquid loaded (psia) - from EPA TANKS run
M	19.3610	molecular weight of vapors (lb/lb-mol) - from EPA TANKS run
T	511.81	bulk liquid temperature of liquids loaded (deg R) - from EPA TANKS run

Description	Uncontrolled Loading Losses (lb/10^3 gal)	Maximum Throughput [1] (gal/yr)	VOC Emissions (tpy)	VOC Emissions (lb/hr)[2]	HAP Emissions (tpy)	HAP Emissions (lb/hr)[2]
Truck Loading of Produced Fluids	0.22	211,680	0.02	0.09	0.00	0.01

[1] Total estimated maximum annual throughput for the waste fluid tanks.
[2] Lb/hr values assume two (2) hours of loading per day, five (5) days per week.

Company Name:	**Superior Appalachian Pipeline, LLC**
Facility Name:	**Preston Compressor Station**
Project Description:	**G35-D Application**

Catalytic Heaters

Source Designation:	**N/A - Exempt**	
Fuel Used:	Natural Gas	
Higher Heating Value (HHV) (Btu/scf):	1,021	
Heat Input (MMBtu/hr):	0.007	(total)
Fuel Consumption (MMscf/hr):	6.86E-06	
Potential Annual Hours of Operation (hr/yr):	8,760	

Criteria and Manufacturer Specific Pollutant Emission Rates:

Pollutant	Emission Factor (lb/MMscf)[1]	Potential Emissions (lb/hr)[2]	Potential Emissions (tons/yr)[3]
NO_x	100	6.9E-04	3.0E-03
CO	84	5.8E-04	2.5E-03
VOC	5.5	3.8E-05	1.7E-04
SO_2	0.6	4.1E-06	1.8E-05
PM Total	7.6	5.2E-05	2.3E-04
PM Condensable	5.7	3.9E-05	1.7E-04
PM_{10} (Filterable)	1.9	1.3E-05	5.7E-05
$PM_{2.5}$ (Filterable)	1.9	1.3E-05	5.7E-05
Lead	5.00E-04	3.4E-09	1.5E-08
CO_2[4]	117.0	0.82	3.59
CH_4[4]	2.21E-03	1.5E-05	6.8E-05
N_2O[4]	2.21E-04	1.5E-06	6.8E-06

Company Name: Superior Appalachian Pipeline, LLC
Facility Name: Preston Compressor Station
Project Description: G35-D Application

Catalytic Heaters

Hazardous Air Pollutant (HAP) Potential Emissions:

Pollutant	Emission Factor (lb/MMscf)[1]	Potential Emissions (lb/hr)[2]	Potential Emissions (tons/yr)[3]
HAPs:			
Methylnaphthalene (2-)	2.4E-05	1.6E-10	7.2E-10
3-Methylchloranthrene	1.8E-06	1.2E-11	5.4E-11
7,12-Dimethylbenz(a)anthracene	1.6E-05	1.1E-10	4.8E-10
Acenaphthene	1.8E-06	1.2E-11	5.4E-11
Acenaphthylene	1.8E-06	1.2E-11	5.4E-11
Anthracene	2.4E-06	1.6E-11	7.2E-11
Benz(a)anthracene	1.8E-06	1.2E-11	5.4E-11
Benzene	2.1E-03	1.4E-08	6.3E-08
Benzo(a)pyrene	1.2E-06	8.2E-12	3.6E-11
Benzo(b)fluoranthene	1.8E-06	1.2E-11	5.4E-11
Benzo(g,h,i)perylene	1.2E-06	8.2E-12	3.6E-11
Benzo(k)fluoranthene	1.8E-06	1.2E-11	5.4E-11
Chrysene	1.8E-06	1.2E-11	5.4E-11
Dibenzo(a,h) anthracene	1.2E-06	8.2E-12	3.6E-11
Dichlorobenzene	1.2E-03	8.2E-09	3.6E-08
Fluoranthene	3.0E-06	2.1E-11	9.0E-11
Fluorene	2.8E-06	1.9E-11	8.4E-11
Formaldehyde	7.5E-02	5.1E-07	2.3E-06
Hexane	1.8E+00	1.2E-05	5.4E-05
Indo(1,2,3-cd)pyrene	1.8E-06	1.2E-11	5.4E-11
Naphthalene	6.1E-04	4.2E-09	1.8E-08
Phenanthrene	1.7E-05	1.2E-10	5.1E-10
Pyrene	5.0E-06	3.4E-11	1.5E-10
Toluene	3.4E-03	2.3E-08	1.0E-07
Arsenic	2.0E-04	1.4E-09	6.0E-09
Beryillium	1.2E-05	8.2E-11	3.6E-10
Cadmium	1.1E-03	7.5E-09	3.3E-08
Chromium	1.4E-03	9.6E-09	4.2E-08
Cobalt	8.4E-05	5.8E-10	2.5E-09
Manganese	3.8E-04	2.6E-09	1.1E-08
Mercury	2.6E-04	1.8E-09	7.8E-09
Nickel	2.1E-03	1.4E-08	6.3E-08
Selenium	2.4E-05	1.6E-10	7.2E-10
Total HAP		**1.3E-05**	**5.7E-05**

[1] Emission factors from AP-42 Section 1.4 "Natural Gas Combustion" Tables 1.4-1, 1.4-2, & 1.4-3

[2] Emission Rate (lb/hr) = Rated Capacity (MMscf/hr) x Emission Factor (lb/MMscf).

[3] Annual Emissions $(tons/yr)_{Potential} = (lb/hr)_{Emissions} \times$ (Maximum Allowable Operating Hours, 8760 hr/yr) x (1 ton/2000 lb).

[4] GHG Emission factors from Tables C-1 and C-2, 40 CFR 98, Subpart C.

Company Name: Superior Appalachian Pipeline, LLC
Facility Name: Preston Compressor Station
Project Description: G35-D Application

Fugitive Emissions

Fugitive Emissions from Component Leaks

Facility Equipment Type[1]	Valves	Connectors	Open-Ended Lines	Pressure Relief Devices
Wellhead	8	38	0.5	0
Separators	1	6	0	0
Meters/Piping	12	45	0	0
Compressors	12	57	0	0
In-line heaters	14	65	2	1
Dehydrators	24	90	2	2

[1] Table W-1B to Subpart W of Part 98 —Default Average Component Counts for Major Onshore Natural Gas Production

Fugitive VOC/Total Emissions from Component Leaks

Equipment Type	Service	Emission Factors[1] (kg/hr/source)	Facility Equipment Count[2] (units)	TOC Annual Fugitive Emissions (tpy)	Weight Fraction VOC	Weight Fraction HAP	VOC Emissions[3] (tpy)	HAP Emissions[3] (tpy)
Pumps	Light Liquid	0.01990	3	0.58	1.00	0.10	0.58	0.0582836
Compressor	Gas	0.22800	1	2	0.00	2.1E-04	4.6E-03	4.6E-04
Valves	Gas	0.00597	78	4.50	0.00	2.1E-04	0.01	9.4E-04
Pressure Relief Valves	Gas	0.10400	7	7.03	0.00	2.1E-04	0.01	1.5E-03
Open-Ended Lines	All	0.00170	3	0.05	0.00	2.1E-04	1.0E-04	1.0E-05
Connectors	All	0.00183	324	5.73	0.00	2.1E-04	0.01	1.2E-03
Intermittent Pneumatic Devices[4]	Gas	13.5	0	---	---	---	0.0E+00	0.0E+00
			Emission Totals:	20.08	---	---	0.62	0.06

[1] U.S. EPA. Office of Air Quality Planning and Standards. *Protocol for Equipment Leak Emission Estimates.* Table 2-1. (Research Triangle Park, NC: U.S. EPA EPA-453/R-95-017, 1995). SOCMI factors were used as it was representative of natural gas extraction. The pneumatic controller value is from 40 CFR 98 Subpart W, Table W-1A (units of scf/hr-component).

[2] Assumes one pump for each tank and one meter. Pressure relief valves count includes two for each storage tank. Pneumatics at this facility are air-powered, emissions are zero. A 50% compliance margin is added to the component counts based on Subpart W cor

[3] Potential emissions VOC/HAP (tpy) = Emission factor (kg/hr/source) * Number of Sources * Weight % VOC/HAP x 2.2046 (lb/kg) x 8,760 (hr/yr) ÷ 2,000 (lb/ton)

[4] Potential emissions VOC/HAP (tpy) = Gas volume vented (scf/yr) * Molar weight of natural gas (lb/lb-mol) * Weight % VOC/HAP ÷ 100 ÷ 379 (scf/lb-mol) ÷ 2,000 (lb/ton)

Company Name: Superior Appalachian Pipeline, LLC
Facility Name: Preston Compressor Station
Project Description: G35-D Application

Fugitive Emissions

Fugitive Specific HAP Emissions from Component Leaks

Equipment Type	Service	Emission Factors[1] (kg/hr/source)	Facility Equipment Count[2] (units)	TOC Annual Fugitive Emissions (tpy)	Benzene Emissions[3] (tpy)	Toluene Emissions[3] (tpy)	Ethylbenzene Emissions[3] (tpy)	Xylene Emissions[3] (tpy)	n-Hexane Emissions[4] (tpy)
Pumps	Light Liquid	0.01990	3	0.58	<0.01	<0.01	<0.01	<0.01	1.2E-04
Compressor	Gas	0.22800	1	2.20	<0.01	<0.01	<0.01	<0.01	4.6E-04
Valves	Gas	0.00597	78	4.50	<0.01	<0.01	<0.01	<0.01	9.4E-04
Pressure Relief Valves	Gas	0.10400	7	7.03	<0.01	<0.01	<0.01	<0.01	1.5E-03
Open-Ended Lines	All	0.00170	3	0.05	<0.01	<0.01	<0.01	<0.01	1.0E-05
Connectors	All	0.00183	324	5.73	<0.01	<0.01	<0.01	<0.01	1.2E-03
Intermittent Pneumatic Devices[4]	Gas	13.5	0	---	<0.01	<0.01	<0.01	<0.01	<0.01
			Emission Totals:	**20.08**	**<0.01**	**<0.01**	**<0.01**	**<0.01**	**4.2E-03**

[1] U.S. EPA. Office of Air Quality Planning and Standards. *Protocol for Equipment Leak Emission Estimates.* Table 2-1. (Research Triangle Park, NC: U.S. EPA EPA-453/R-95-017, 1995). SOCMI factors were used as it was representative of natural gas liquids extraction. The pneumatic controller value is from 40 CFR 98 Subpart W, Table W-1A.

[2] Assumes one pump for each tank. Pressure relief valves count includes one Emergency Pressure Relief valve and one lock-down hatch for each storage tank. A 50% compliance margin is added to the component counts based on Subpart W counts.

[3] Potential emissions HAP (tpy) = Emission factor (kg/hr/source) * Number of Sources * Weight % HAP x 2.2046 (lb/kg) x 8,760 (hr/yr) ÷ 2,000 (lb/ton)

[4] Potential emissions HAP (tpy) = Gas volume vented (scf/yr) * Molar weight of natural gas (lb/lb-mol) * Weight % HAP ÷ 100 ÷ 379 (scf/lb-mol) ÷ 2,000 (lb/ton)

GHG Fugitive Emissions from Component Leaks

Component	Component Count	GHG Emission Factor[1] scf/hr/component	CH_4 Emissions[2,3] (tpy)	CO_2 Emissions[2,3] (tpy)	CO_2e Emissions[4] (tpy)
Pumps	3	0.01	0.01	6.4E-05	0.14
Compressor	1	4.17	0.75	0.01	18.82
Valves	78	0.027	0.38	4.5E-03	9.50
Pressure Relief Devices	7	0.04	0.05	6.0E-04	1.26
Open-Ended Lines	3	0.061	0.03	3.9E-04	0.83
Connectors	324	0.003	0.18	2.1E-03	4.39
Intermittent Pneumatic Devices	0	6	0.0E+00	0.0E+00	0.0E+00
Total			1.40	0.02	34.94

[1] Population emission factors for gas service in the Eastern U.S. from *Table W-1A of Subpart W - Default Whole Gas Emission Factors for Onshore Production* , 40 CFR 98, Subpart W (table W-6 for compressor).

[2] Calculated in accordance with Equations W-32a, W-35 and W-36 in Subpart W of 40 CFR 98. See footnote 4 above for sample calculation.

[3] Potential emissions VOC/HAP (tpy) = Gas volume vented (scf/yr) * Molar weight of natural gas (lb/lb-mol) * Weight % VOC/HAP ÷ 100 ÷ 379 (scf/lb-mol) ÷ 2,000 (lb/ton)
Mole fractions of CH_4 and CO_2 based on gas analysis:
CH_4: 97% CO_2: 0.42%

[4] Carbon equivalent emissions (CO_2e) are based on the following Global Warming Potentials (GWP) from 40 CFR Part 98, Table A-1:
Carbon Dioxide (CO_2): 1
Methane (CH_4): 25

Company Name: Superior Appalachian Pipeline, LLC
Facility Name: Preston Compressor Station
Project Description: G35-D Application

Fugitive Emissions

Fugitive Emissions from Venting

Source	Volume (scf/yr)	VOC Emissions (tpy)	Benzene Emissions (tpy)	Toluene Emissions (tpy)	Ethylbenzene Emissions (tpy)	Xylene Emissions (tpy)	n-Hexane Emissions (tpy)	HAP Emissions (tpy)	CH_4 Emissions (tpy)	CO_2 Emissions (tpy)	CO_2e Emissions (tpy)
Miscellaneous Gas Venting	1,000,000	0.04	<0.01	<0.01	<0.01	<0.01	4.5E-03	4.5E-03	20.60	0.24	515.21
Total		0.04	<0.01	<0.01	<0.01	<0.01	4.5E-03	4.5E-03	20.60	0.24	515.21

[1] VOC and HAP emissions are based on sum of the fractions of the pollutants in the site-specific gas analysis in those classifications, and are calculated in accordance with standard conversion methodology and factors.
[2] CH_4 and CO_2 emissions are based on fractions of these pollutants in the site-specific gas analysis, and are calculated in accordance with Equations W-35 and W-36 in Subpart W of 40 CFR 98.
[3] GHG (CO_2e) is carbon dioxide equivalent, which is the summation of CO_2 (GWP = 1) + CH_4 (GWP = 25) + N_2O (GWP = 298).
[4] Total gas volume emitted (and thus subsequent emissions values) is estimated based on engineering judgement and is conservative.
[5] Total gas volume emitted includes blowdowns and other venting activities.
[6] Potential emissions VOC/HAP (tpy) = Gas volume vented (scf/yr) * Molar weight of natural gas (lb/lb-mol) * Weight % VOC/HAP ÷ 100 ÷ 379 (scf/lb-mol) ÷ 2,000 (lb/ton)
[7] Potential emissions CH_4/CO_2 (tpy) = Gas volume vented (scf/yr) * Mole % CH_4/CO_2 ÷ 100 * Density CH_4/CO_2 (kg/scf) * 1,000 (g/kg) ÷ 453.6 (g/lb) ÷ 2,000 (lb/ton)

Company Name: Superior Appalachian Pipeline, LLC
Facility Name: Preston Compressor Station
Project Description: G35-D Application

Haul Roads

Estimated Potential Road Fugitive Emissions

Unpaved Road Emissions

Unpaved Roads: $E\ (lb/VMT) = k(s/12)^a(W/3)^b*[(365-p)/365]$

	PM	PM_{10}	$PM_{2.5}$	
k Factor (lb/VMT)	4.9	1.5	0.15	AP-42 Table 13.2.2-2 (Final, 11/06)
Silt content, s	4.8	%		AP-42 Table 13.2.2-1 (11/06), for Sand and Gravel Processing
Number of Rain Days, p	150			AP-42 Figure 13.2.1-2
a	0.7	0.9	0.9	AP-42 Table 13.2.2-2 (Final, 11/06)
b	0.45	0.45	0.45	AP-42 Table 13.2.2-2 (Final, 11/06)

Description	Weight of Empty Truck (tons)	Weight of Truck w/ Max Load (tons)	Mean Vehicle Weight (tons)	Length of Unpaved Road Traveled (mile)	Trips Per Year	Mileage Per Year	Control (%)	Emissions (tpy) PM	PM_{10}	$PM_{2.5}$
Liquids Hauling	20	40	30	0.08	53	8	0	0.02	0.00	0.00
Employee Vehicles	3	3	3	0.08	200	30	0	0.02	0.01	0.00
Total Potential Emissions								**0.04**	**0.01**	**0.00**

Company Name: Superior Appalachian Pipeline, LLC
Facility Name: Preston Compressor Station
Project Description: G35-D Application

Gas Analysis

Sample Location: Preston Compressor Station
HHV (Btu/scf): 1,021

Constituent	Natural Gas Stream Speciation (Mole %)	Molecular Weight	Molar Weight	Average Weight Fraction	Natural Gas Stream Speciation (Wt. %)
Carbon Dioxide	0.422	44.01	0.19	0.01	1.127
Nitrogen	0.388	28.01	0.11	0.01	0.660
Methane	97.329	16.04	15.61	0.95	94.740
Ethane	1.790	30.07	0.54	0.03	3.266
Propane	0.057	44.10	0.03	0.00	0.153
Isobutane	0.002	58.12	0.00	0.00	0.007
n-Butane	0.005	58.12	0.00	0.00	0.018
Isopentane	0.001	72.15	0.00	0.00	0.004
n-Pentane	0.001	72.15	0.00	0.00	0.004
n-Hexane	0.004	86.18	0.00	0.00	0.021
Totals	99.999		16.48	1.00	100

TOC (Total)	99.19	98.21
VOC (Total)	0.07	0.21
HAP (Total)	0.00	0.02

GRI-GLYCalc VERSION 4.0 - AGGREGATE CALCULATIONS REPORT

Case Name: Superior - Preston Station Dehydrator
File Name: Z:\Client\Superior Pipeline\West Virginia\Preston\Projects\153901.0051 G35-D Modification Application\04 Draft\2017-0315 Draft G35-D Mod Application\Attach U - Emission Calcs\02 GRI-GLYCalc\2017-0315_SAP_Preston_G35D_Dehy v1.0.ddf
Date: March 15, 2017

DESCRIPTION:

Description: Potential-to-emit calculation run

Annual Hours of Operation: 8760.0 hours/yr

EMISSIONS REPORTS:

UNCONTROLLED REGENERATOR EMISSIONS

Component	lbs/hr	lbs/day	tons/yr
Methane	24.0420	577.007	105.3038
Ethane	1.0615	25.476	4.6493
Propane	0.0606	1.455	0.2655
Isobutane	0.0035	0.083	0.0152
n-Butane	0.0104	0.250	0.0457
Isopentane	0.0027	0.064	0.0116
n-Pentane	0.0033	0.079	0.0144
n-Hexane	0.0251	0.602	0.1099
Total Emissions	25.2090	605.016	110.4153
Total Hydrocarbon Emissions	25.2090	605.016	110.4153
Total VOC Emissions	0.1055	2.533	0.4623
Total HAP Emissions	0.0251	0.602	0.1099

EQUIPMENT REPORTS:

ABSORBER

NOTE: Because the Calculated Absorber Stages was below the minimum allowed, GRI-GLYCalc has set the number of Absorber Stages to 1.25 and has calculated a revised Dry Gas Dew Point.

Calculated Absorber Stages:	1.25	
Calculated Dry Gas Dew Point:	0.32	lbs. H2O/MMSCF
Temperature:	45.0	deg. F
Pressure:	900.0	psig
Dry Gas Flow Rate:	7.0000	MMSCF/day
Glycol Losses with Dry Gas:	0.0058	lb/hr
Wet Gas Water Content:	Saturated	
Calculated Wet Gas Water Content:	10.61	lbs. H2O/MMSCF
Calculated Lean Glycol Recirc. Ratio:	29.99	gal/lb H2O

Component	Remaining in Dry Gas	Absorbed in Glycol

Water	3.03%	96.97%
Carbon Dioxide	99.57%	0.43%
Nitrogen	99.98%	0.02%
Methane	99.98%	0.02%
Ethane	99.92%	0.08%
Propane	99.87%	0.13%
Isobutane	99.79%	0.21%
n-Butane	99.71%	0.29%
Isopentane	99.70%	0.30%
n-Pentane	99.59%	0.41%
n-Hexane	99.23%	0.77%

REGENERATOR

No Stripping Gas used in regenerator.

Component	Remaining in Glycol	Distilled Overhead
Water	80.81%	19.19%
Carbon Dioxide	0.00%	100.00%
Nitrogen	0.00%	100.00%
Methane	0.00%	100.00%
Ethane	0.00%	100.00%
Propane	0.00%	100.00%
Isobutane	0.00%	100.00%
n-Butane	0.00%	100.00%
Isopentane	0.31%	99.69%
n-Pentane	0.35%	99.65%
n-Hexane	0.41%	99.59%

STREAM REPORTS:

WET GAS STREAM

Temperature: 45.00 deg. F
Pressure: 914.70 psia
Flow Rate: 2.92e+005 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	2.24e-002	3.10e+000
Carbon Dioxide	4.22e-001	1.43e+002
Nitrogen	3.88e-001	8.36e+001
Methane	9.73e+001	1.20e+004
Ethane	1.79e+000	4.14e+002
Propane	5.70e-002	1.93e+001
Isobutane	2.00e-003	8.94e-001
n-Butane	5.00e-003	2.23e+000
Isopentane	1.00e-003	5.55e-001
n-Pentane	1.00e-003	5.55e-001
n-Hexane	4.00e-003	2.65e+000

Total Components	100.00	1.27e+004

DRY GAS STREAM

Temperature: 45.00 deg. F
Pressure: 914.70 psia
Flow Rate: 2.92e+005 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	6.78e-004	9.38e-002
Carbon Dioxide	4.20e-001	1.42e+002
Nitrogen	3.88e-001	8.35e+001
Methane	9.73e+001	1.20e+004
Ethane	1.79e+000	4.14e+002
Propane	5.69e-002	1.93e+001
Isobutane	2.00e-003	8.92e-001
n-Butane	4.99e-003	2.23e+000
Isopentane	9.97e-004	5.53e-001
n-Pentane	9.96e-004	5.52e-001
n-Hexane	3.97e-003	2.63e+000
Total Components	100.00	1.27e+004

LEAN GLYCOL STREAM

Temperature: 45.00 deg. F
Flow Rate: 1.50e+000 gpm

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.85e+001	8.32e+002
Water	1.50e+000	1.27e+001
Carbon Dioxide	7.25e-012	6.13e-011
Nitrogen	2.37e-013	2.00e-012
Methane	9.83e-018	8.31e-017
Ethane	1.78e-008	1.50e-007
Propane	1.25e-010	1.05e-009
Isobutane	6.59e-012	5.57e-011
n-Butane	1.89e-011	1.59e-010
Isopentane	9.89e-007	8.35e-006
n-Pentane	1.37e-006	1.16e-005
n-Hexane	1.21e-005	1.02e-004
Total Components	100.00	8.45e+002

RICH GLYCOL AND PUMP GAS STREAM

Temperature: 45.00 deg. F
Pressure: 914.70 psia
Flow Rate: 1.56e+000 gpm
NOTE: Stream has more than one phase.

Component	Conc. (wt%)	Loading (lb/hr)
TEG	9.52e+001	8.32e+002
Water	1.79e+000	1.57e+001

Carbon Dioxide	9.95e-002	8.69e-001
Nitrogen	1.95e-002	1.70e-001
Methane	2.75e+000	2.40e+001
Ethane	1.21e-001	1.06e+000
Propane	6.94e-003	6.06e-002
Isobutane	3.96e-004	3.46e-003
n-Butane	1.19e-003	1.04e-002
Isopentane	3.05e-004	2.67e-003
n-Pentane	3.78e-004	3.31e-003
n-Hexane	2.88e-003	2.52e-002
Total Components	100.00	8.74e+002

REGENERATOR OVERHEADS STREAM

Temperature: 212.00 deg. F
Pressure: 14.70 psia
Flow Rate: 6.56e+002 scfh

Component	Conc. (vol%)	Loading (lb/hr)
Water	9.66e+000	3.01e+000
Carbon Dioxide	1.14e+000	8.69e-001
Nitrogen	3.51e-001	1.70e-001
Methane	8.67e+001	2.40e+001
Ethane	2.04e+000	1.06e+000
Propane	7.95e-002	6.06e-002
Isobutane	3.44e-003	3.46e-003
n-Butane	1.04e-002	1.04e-002
Isopentane	2.13e-003	2.66e-003
n-Pentane	2.64e-003	3.29e-003
n-Hexane	1.68e-002	2.51e-002
Total Components	100.00	2.93e+001

GRI-GLYCalc VERSION 4.0 - SUMMARY OF INPUT VALUES

Case Name: Superior - Preston Station Dehydrator
File Name: Z:\Client\Superior Pipeline\West Virginia\Preston\Projects\153901.0051 G35-D Modification Application\04 Draft\2017-0315 Draft G35-D Mod Application\Attach U - Emission Calcs\02 GRI-GLYCalc\2017-0315_SAP_Preston_G35D_Dehy v1.0.ddf
Date: March 15, 2017

DESCRIPTION:

Description: Potential-to-emit calculation run

Annual Hours of Operation: 8760.0 hours/yr

WET GAS:

Temperature: 45.00 deg. F
Pressure: 900.00 psig
Wet Gas Water Content: Saturated

Component	Conc. (vol %)
Carbon Dioxide	0.4220
Nitrogen	0.3880
Methane	97.3290
Ethane	1.7900
Propane	0.0570
Isobutane	0.0020
n-Butane	0.0050
Isopentane	0.0010
n-Pentane	0.0010
n-Hexane	0.0040

DRY GAS:

Flow Rate: 7.0 MMSCF/day
Water Content: 7.0 lbs. H2O/MMSCF

LEAN GLYCOL:

Glycol Type: TEG
Water Content: 1.5 wt% H2O
Flow Rate: 1.5 gpm

PUMP:

Glycol Pump Type: Gas Injection
Gas Injection Pump Volume Ratio: 0.080 acfm gas/gpm glycol

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* Project Setup Information
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Project File : Z:\Client\Superior Pipeline\West Virginia\Preston\Projects\153901.0051 G35-D Modification Application\04 Draft\2017-0315 Draft G35-D Mod Application\Attach U - Emission Calcs\03 E&P TANK\2017-0316_SAP_Preston_G35D_WasteTanks.ept
Flowsheet Selection : Oil Tank with Separator
Calculation Method : RVP Distillation
Control Efficiency : 100.0%
Known Separator Stream : Geographical Region
Geographical Region : All Regions in US
Entering Air Composition : No

Filed Name : Preston Compressor Station
Well Name : Waste Fluid Tanks (T01 & T02)
Date : 2017.03.16

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* Data Input
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Separator Pressure : 50.00[psig]
Separator Temperature : 125.00[F]
Ambient Pressure : 14.70[psia]
Ambient Temperature : 125.00[F]
C10+ SG : 0.8420
C10+ MW : 287.00

-- Low Pressure Oil

No.	Component	mol %
1	H2S	1.2800
2	O2	0.0000
3	CO2	0.0300
4	N2	0.0000
5	C1	1.2700
6	C2	2.0800
7	C3	4.5700
8	i-C4	1.8900
9	n-C4	6.4800
10	i-C5	3.8800
11	n-C5	7.0400
12	C6	3.0500
13	C7	6.8200
14	C8	7.7800
15	C9	7.2300
16	C10+	37.9300
17	Benzene	0.8300
18	Toluene	1.0200
19	E-Benzene	0.0700
20	Xylenes	0.6500
21	n-C6	6.1000
22	224Trimethylp	0.0000

-- Sales Oil

Production Rate	: 0.1[bbl/day]
Days of Annual Operation	: 365 [days/year]
API Gravity	: 49.0
Reid Vapor Pressure	: 8.90[psia]

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* Calculation Results
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-- Emission Summary

Item	Uncontrolled [ton/yr]	Uncontrolled [lb/hr]
Page 1---------- E&P TANK		
Total HAPs	0.020	0.005
Total HC	0.254	0.058
VOCs, C2+	0.247	0.056
VOCs, C3+	0.229	0.052

Uncontrolled Recovery Info.

Vapor	10.6600 x1E-3	[MSCFD]
HC Vapor	9.9100 x1E-3	[MSCFD]
GOR	106.60	[SCF/bbl]

-- Emission Composition

No	Component	Uncontrolled [ton/yr]	Uncontrolled [lb/hr]
1	H2S	0.012	0.003
2	O2	0.000	0.000
3	CO2	0.000	0.000
4	N2	0.000	0.000
5	C1	0.006	0.001
6	C2	0.018	0.004
7	C3	0.049	0.011
8	i-C4	0.020	0.005
9	n-C4	0.059	0.013
10	i-C5	0.026	0.006
11	n-C5	0.039	0.009
12	C6	0.008	0.002
13	C7	0.008	0.002
14	C8	0.004	0.001
15	C9	0.002	0.000
16	C10+	0.000	0.000
17	Benzene	0.002	0.000
18	Toluene	0.001	0.000
19	E-Benzene	0.000	0.000
20	Xylenes	0.000	0.000
21	n-C6	0.013	0.003
22	224Trimethylp	0.000	0.000
	Total	0.267	0.061

-- Stream Data

No.	Component	MW	LP Oil	Flash Oil	Sale Oil	Flash Gas	W&S Gas

Total Emissions

		mol %	mol %	mol %	mol %	mol %
mol %						
1 H2S	34.80	1.2800	0.2130	0.2130	6.8990	0.0000
6.8990						
2 O2	32.00	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000						
3 CO2	44.01	0.0300	0.0021	0.0021	0.1768	0.0000
0.1768						
4 N2	28.01	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000						
5 C1	16.04	1.2700	0.0369	0.0369	7.7635	0.0000
7.7635						
6 C2	30.07	2.0800	0.2466	0.2466	11.7345	0.0000
11.7345						
7 C3	44.10	4.5700	1.3445	1.3445	21.5554	0.0000
21.5554						
8 i-C4	58.12	1.8900	0.9750	0.9750	6.7085	0.0000
6.7085						
9 n-C4	58.12	6.4800	3.9279	3.9279	19.9192	0.0000
19.9192						
10 i-C5	72.15	3.8800	3.2983	3.2983	6.9431	0.0000
6.9431						
11 n-C5	72.15	7.0400	6.3906	6.3906	10.4595	0.0000
10.4595						
12 C6	86.16	3.0500	3.2895	3.2895	1.7886	0.0000
1.7886						
13 C7	100.20	6.8200	7.8112	7.8112	1.6004	0.0000
1.6004						
14 C8	114.23	7.7800	9.1297	9.1297	0.6724	0.0000
0.6724						
15 C9	128.28	7.2300	8.5561	8.5561	0.2466	0.0000
0.2466						
16 C10+	166.00	37.9300	45.1329	45.1329	0.0000	0.0000
0.0000						
17 Benzene	78.11	0.8300	0.9150	0.9150	0.3821	0.0000
0.3821						
18 Toluene	92.13	1.0200	1.1834	1.1834	0.1596	0.0000
0.1596						
19 E-Benzene	106.17	0.0700	0.0825	0.0825	0.0041	0.0000
0.0041						
20 Xylenes	106.17	0.6500	0.7670	0.7670	0.0341	0.0000
0.0341						
21 n-C6	86.18	6.1000	6.6977	6.6977	2.9524	0.0000
2.9524						
22 224Trimethylp	114.24	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000						
MW		159.21	179.60	179.60	51.88	0.00
51.88						
Stream Mole Ratio		1.0000	0.8404	0.8404	0.1596	0.0000
0.1596						
Heating Value	[BTU/SCF]				2822.40	0.00
2822.40						
Gas Gravity	[Gas/Air]				1.79	0.00
1.79						
Bubble Pt. @ 100F	[psia]	76.98	12.70	12.70		

RVP @ 100F	[psia]	27.72	8.66	8.66	

Spec. Gravity @ 100F	0.690	0.698	0.698

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Preston Station (Oil Tanks)
City:	
State:	West Virginia
Company:	
Type of Tank:	Horizontal Tank
Description:	Compressor and Engine Lube Oil Tanks

Tank Dimensions

Shell Length (ft):		8.00
Diameter (ft):		4.00
Volume (gallons):		500.00
Turnovers:		12.00
Net Throughput(gal/yr):		6,000.00
Is Tank Heated (y/n):	N	
Is Tank Underground (y/n):	N	

Paint Characteristics

Shell Color/Shade:	Gray/Medium
Shell Condition	Good

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Elkins, West Virginia (Avg Atmospheric Pressure = 13.73 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Preston Station (Oil Tanks) - Horizontal Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	All	57.20	47.18	67.23	52.14	0.0066	0.0041	0.0086	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0074

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Preston Station (Oil Tanks) - Horizontal Tank

Annual Emission Calcaulations	
Standing Losses (lb):	0.2655
Vapor Space Volume (cu ft):	64.0325
Vapor Density (lb/cu ft):	0.0002
Vapor Space Expansion Factor:	0.0736
Vented Vapor Saturation Factor:	0.9993
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	64.0325
Tank Diameter (ft):	4.0000
Effective Diameter (ft):	6.3847
Vapor Space Outage (ft):	2.0000
Tank Shell Length (ft):	8.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0002
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0066
Daily Avg. Liquid Surface Temp. (deg. R):	516.8667
Daily Average Ambient Temp. (deg. F):	49.0583
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	511.8083
Tank Paint Solar Absorptance (Shell):	0.6800
Daily Total Solar Insulation Factor (Btu/sqft day):	1,193.8870

Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0736
Daily Vapor Temperature Range (deg. R):	40.1436
Daily Vapor Pressure Range (psia):	0.0045
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0066
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0041
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0086
Daily Avg. Liquid Surface Temp. (deg R):	516.8667
Daily Min. Liquid Surface Temp. (deg R):	506.8308
Daily Max. Liquid Surface Temp. (deg R):	526.9026
Daily Ambient Temp. Range (deg. R):	24.1833
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9993
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	0.0066
Vapor Space Outage (ft):	2.0000
Working Losses (lb):	0.1223
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0066
Annual Net Throughput (gal/yr.):	6,000.0000
Annual Turnovers:	12.0000
Turnover Factor:	1.0000
Tank Diameter (ft):	4.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	0.3878

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Preston Station (Oil Tanks) - Horizontal Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	0.12	0.27	0.39

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Preston Station (Glycol Tank)
City:	
State:	West Virginia
Company:	
Type of Tank:	Horizontal Tank
Description:	Triethylene Glycol Tank

Tank Dimensions

Shell Length (ft):		5.00
Diameter (ft):		4.00
Volume (gallons):		300.00
Turnovers:		12.00
Net Throughput(gal/yr):		3,600.00
Is Tank Heated (y/n):	N	
Is Tank Underground (y/n):	N	

Paint Characteristics

Shell Color/Shade:	Gray/Medium
Shell Condition	Good

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Elkins, West Virginia (Avg Atmospheric Pressure = 13.73 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Preston Station (Glycol Tank) - Horizontal Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Propylene glycol	All	57.20	47.16	67.23	52.14	0.0008	0.0005	0.0014	76.1100			76.11	Option 2: A=8.2082, B=2085.9, C=203.54

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Preston Station (Glycol Tank) - Horizontal Tank

Annual Emission Calcaulations	
Standing Losses (lb):	0.0118
Vapor Space Volume (cu ft):	40.0203
Vapor Density (lb/cu ft):	0.0000
Vapor Space Expansion Factor:	0.0734
Vented Vapor Saturation Factor:	0.9999
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	40.0203
Tank Diameter (ft):	4.0000
Effective Diameter (ft):	5.0475
Vapor Space Outage (ft):	2.0000
Tank Shell Length (ft):	5.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0000
Vapor Molecular Weight (lb/lb-mole):	76.1100
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0008
Daily Avg. Liquid Surface Temp. (deg. R):	516.8667
Daily Average Ambient Temp. (deg. F):	49.0583
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	511.8083
Tank Paint Solar Absorptance (Shell):	0.6800
Daily Total Solar Insulation Factor (Btu/sqft day):	1,193.8870

Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0734
Daily Vapor Temperature Range (deg. R):	40.1436
Daily Vapor Pressure Range (psia):	0.0009
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0008
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0005
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0014
Daily Avg. Liquid Surface Temp. (deg R):	516.8567
Daily Min. Liquid Surface Temp. (deg R):	506.8308
Daily Max. Liquid Surface Temp. (deg R):	526.9026
Daily Ambient Temp. Range (deg. R):	24.1833
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9999
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	0.0008
Vapor Space Outage (ft):	2.0000
Working Losses (lb):	0.0053
Vapor Molecular Weight (lb/lb-mole):	76.1100
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0008
Annual Net Throughput (gal/yr.):	3,600.0000
Annual Turnovers:	12.0000
Turnover Factor:	1.0000
Tank Diameter (ft):	4.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	0.0171

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Preston Station (Glycol Tank) - Horizontal Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Propylene glycol	0.01	0.01	0.02

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Preston Station (Liquid Loading)
City:	
State:	West Virginia
Company:	
Type of Tank:	Vertical Fixed Roof Tank
Description:	Liquid loading parameter calculations for truck loading of produced fluids

Tank Dimensions

Shell Height (ft):	14.00
Diameter (ft):	10.00
Liquid Height (ft) :	14.00
Avg. Liquid Height (ft):	7.00
Volume (gallons):	8,820.00
Turnovers:	24.00
Net Throughput(gal/yr):	211,680.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Medium
Shell Condition	Good
Roof Color/Shade:	Gray/Medium
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.00

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Elkins, West Virginia (Avg Atmospheric Pressure = 13.73 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Preston Station (Liquid Loading) - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Produced Water	All	57.20	47.16	67.23	52.14	0.2365	0.1708	0.3240	19.3610			18.17	
Benzene						1.0800	0.8090	1.4225	78.1100	0.0001	0.0004	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane (-n)						0.4772	0.3937	0.5736	58.1200	0.0005	0.0009	58.12	Option 2: A=5.09536, B=935.86, C=238.73
Decane (-n)						0.0313	0.0249	0.0394	142.2900	0.0045	0.0006	142.29	Option 1: VP50 = .026411 VP60 = .033211
Ethylbenzene						0.0984	0.0684	0.1390	106.1700	0.0000	0.0000	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Heptane (-n)						0.5620	0.4123	0.7572	100.2000	0.0008	0.0017	100.20	Option 3: A=37358, B=8.2585
Hexane (-n)						1.7780	1.3561	2.3024	86.1700	0.0010	0.0071	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopentane						9.4118	7.3180	11.8312	72.1500	0.0003	0.0123	72.15	Option 1: VP50 = 7.889 VP60 = 10.005
Nonane (-n)						0.0614	0.0482	0.0782	128.2600	0.0009	0.0002	128.26	Option 1: VP50 = .051285 VP60 = .065278
Octane (-n)						0.1362	0.1051	0.1764	114.2300	0.0009	0.0005	114.23	Option 1: VP50 = .112388 VP60 = .145444
Pentane (-n)						6.4211	5.1036	8.0084	72.1500	0.0006	0.0163	72.15	Option 3: A=27691, B=7.558
Propane (-n)						103.5663	88.7398	120.2028	44.0956	0.0002	0.0057	44.10	Option 2: A=7.340862493, B=1104.2267744, C=291.70993941
Toluene						0.3024	0.2186	0.4120	92.1300	0.0001	0.0001	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Water						0.2277	0.1634	0.3135	18.0150	0.9900	0.8941	18.02	Option 1: VP50 = .178 VP60 = .247
Xylene (-m)						0.0818	0.0567	0.1160	106.1700	0.0001	0.0000	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Preston Station (Liquid Loading) - Vertical Fixed Roof Tank

Annual Emission Calcaulations	
Standing Losses (lb):	12.8805
Vapor Space Volume (cu ft):	549.7787
Vapor Density (lb/cu ft):	0.0008
Vapor Space Expansion Factor:	0.0846
Vented Vapor Saturation Factor:	0.9193
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	549.7787
Tank Diameter (ft):	10.0000
Vapor Space Outage (ft):	7.0000
Tank Shell Height (ft):	14.0000
Average Liquid Height (ft):	7.0000
Roof Outage (ft):	0.0000
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.0000
Roof Height (ft):	0.0000
Roof Slope (ft/ft):	0.0000
Shell Radius (ft):	5.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0008
Vapor Molecular Weight (lb/lb-mole):	19.3610
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2365
Daily Avg. Liquid Surface Temp. (deg. R):	516.8667
Daily Average Ambient Temp. (deg. F):	49.0583
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	511.8083
Tank Paint Solar Absorptance (Shell):	0.6800
Tank Paint Solar Absorptance (Roof):	0.6800
Daily Total Solar Insulation Factor (Btu/sqft day):	1,193.8870
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0846
Daily Vapor Temperature Range (deg. R):	40.1436
Daily Vapor Pressure Range (psia):	0.1531
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2365
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.1708
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.3240
Daily Avg. Liquid Surface Temp. (deg R):	516.8667
Daily Min. Liquid Surface Temp. (deg R):	506.8308
Daily Max. Liquid Surface Temp. (deg R):	526.9026
Daily Ambient Temp. Range (deg. R):	24.1833
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9193
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	0.2365
Vapor Space Outage (ft):	7.0000
Working Losses (lb):	23.0788
Vapor Molecular Weight (lb/lb-mole):	19.3610
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.2365
Annual Net Throughput (gal/yr.):	211,680.0000
Annual Turnovers:	24.0000
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	8,820.0000
Maximum Liquid Height (ft):	14.0000
Tank Diameter (ft):	10.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	35.9593

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Preston Station (Liquid Loading) - Vertical Fixed Roof Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Produced Water	23.08	12.88	35.96
Decane (-n)	0.01	0.01	0.02
Nonane (-n)	0.00	0.00	0.01
Ethylbenzene	0.00	0.00	0.00
Octane (-n)	0.01	0.01	0.02
Toluene	0.00	0.00	0.01
Heptane (-n)	0.04	0.02	0.06
Benzene	0.01	0.00	0.01

Hexane (-n)	0.16	0.09	0.25
Isopentane	0.28	0.16	0.44
Pentane (-n)	0.38	0.21	0.59
Water	20.63	11.52	32.15
Propane (-n)	1.52	0.85	2.36
Butane (-n)	0.02	0.01	0.03
Xylene (-m)	0.00	0.00	0.00

USA COMPRESSION

Emissions Report

Compressor Engine CE-2A Specifications

USA Compression Unit 1910 G3408TALE/JGA4

Engine Serial Number :	BAZ02471	Engine Manufactured Date :	11/17/2007
Max HP :	425	Max RPM :	1800
Number of Engine Cylinders :	8	Total Displacement (in3) :	1099
Combustion Type & Setting :	4 Stroke Lean Burn	Fuel Delivery Method:	Carburetor
Compression Ratio :	8.5:1	Combustion Air Treatment :	Turbocharged and Aftercooled
Engine Modified/Reconstructed? :	Not Applicable - reconstruction last reviewed on 11/19/13		
Compressor Frame Serial # :	F29340	Unit Packaged Date :	07/02/2008
Compressor Frame Max RPM :	1800	# of Compressor Throws :	4

AIR ENVIRONMENTAL REGULATIONS

County and State Selected for Quote: Preston WV

NSPS JJJJ	NOx	g/hp-hr	CO	g/hp-hr	VOC	g/hp-hr		
Ozone Non-Attainment / General Permit	NOx	g/hp-hr	CO	g/hp-hr	VOC	g/hp-hr	CH2O	g/hp-hr

RAW ENGINE EMISSIONS

(based on assumption of burning 900-970 LHV BTU/SCF or 80-85 Fuel Methane # Fuel Gas with little to no H2S)

Fuel Consumption : 8,588 HHV BTU/bhp-hr

	g/bhp-hr	lb/MMBTU	lb/hr	TPY
Nitrogen Oxides (NOx) :	2.00		1.874	8.208
Carbon Monoxide (CO) :	1.62		1.518	6.649
Volatile Organic Compounds (NMNEHC excluding CH2O) :	0.34		0.319	1.397
Formaldehyde (CH2O) :	0.28		0.262	1.148
Particulate Matter (PM) Filterable+Condensable :		0.0100	0.036	0.160
Sulfur Dioxide (SO2) :		0.0006	0.002	0.009

	g/bhp-hr	lb/MMBTU	lb/hr	Metric Tonne/yr
Carbon Dioxide (CO2) :	471.00		441.30	1,753.20
Methane (CH4) :	2.91		2.73	10.83

CONTROLLED EMISSIONS

Catalytic Converter Make and Model:	None
Catalyst Element Type:	Oxidation
Number of Catalyst Elements currently in Housing:	0
Air/Fuel Ratio Control :	Yes
Other Engine Emissions Control Equipment :	None

	% Reduction Required to Comply with JJJJ & Non-Attainment / General Permit Limits	lb/hr	TPY
Nitrogen Oxides (NOx) :	0	1.874	8.208
Carbon Monoxide (CO) :	0	1.518	6.649
Volatile Organic Compounds (NMNEHC excluding CH2O) :	0	0.319	1.397
Formaldehyde (CH2O) :	0	0.262	1.148
Particulate Matter (PM) Filterable+Condensable :	0	0.036	0.160
Sulfur Dioxide (SO2) :	0	0.002	0.009

	% Reduction Required to Comply with JJJJ & Non-Attainment / General Permit Limits	lb/hr	Metric Tonne/yr
Carbon Dioxide (CO2) :	0	441.30	1,753.20
Methane (CH4) :	0	2.73	10.83

1) g/bhp-hr are based on Engine Manufacturer Specifications assuming a "Pipeline Quality" fuel gas composition, 1200 ft elevation, and 100- 110 F Max Air Inlet. Note that g/bhp-hr values are based on 100% engine load operation and some g/hp-hr values are Nominal and are not representative of Not- To-Exceed values. It is recommended to apply safety factor (i.e. increase the value by a nominal percentage) to the g/hp- hr values for Air Permitting to allow for operational flexibility and variations in fuel gas composition .

2) lb/MMBTU emission Factors are based on EPA's AP-42, Fifth Edition, Volume I, Chapter 3: Stationary Internal Combution Sources (Section 3.2 Natural Gas-Fired Reciprocating Engines).

From: Joel Leblanc <JLeblanc@usacompression.com>
Date: January 9, 2015 at 4:20:17 PM EST
To: Jim Jones <JJones@usacompression.com>, Garrett Mehl <garrett.mehl@superiorpipeline.com>
Cc: Ryan Mathews <ryan.mathews@superiorpipeline.com>, Chris Magee <CMagee@usacompression.com>
Subject: RE: 2014 OOOO Reporting

Unit 1910 was set and operated on location for the first time on 7/28/2008 (Hughes County, OK).
The G3408TALE engine was manufactured on 11/17/2007, which is before the NSPS JJJJ trigger date of 7/1/2008 for < 500 HP Four Stroke Lean Burn engines.
Feel free to call me if you have any questions.

Joel D LeBlanc, PE
USA Compression
9595 Six Pines Drive, Suite 6200
The Woodlands, TX 77380
O: 832-510-1282
C: 214-957-0105

WINCO INC®
A Division of DTE Dyna Technology Inc

Generator Engine GE-1 Specifications

PSS60

Conforms to UL STD 2200

LIQUID COOLED PACKAGED STANDBY GENERATOR

Powered by: GM 5.7 Liter Naturally Aspirated

	STANDBY RATING					L.P. GAS				NATURAL GAS			
MODEL NUMBER	POWER OUTPUT (60HZ)	kW	kVA	AMPS	CB AMPS	kW	kVA	AMPS	CB AMPS
PSS60-3	120/240V, 1-Phase, 1.0 p.f.	60	60	250	250	60	60	250	250
PSS60-4	120/208V, 3-Phase, .8 p.f.	60	75	209	175	60	75	209	175
PSS60-17	120/240V, 3-Phase, .8 p.f.	60	75	180	175	60	75	180	175
PSS60-18	277/480V, 3-Phase, .8 p.f.	60	75	90	90	60	75	90	90

Derating Factors: Temperatures - 3% per 10° above 104° F; 3.5% per 1,000 feet elevation above sea level.

ENGINE FEATURES

The 8 cylinder, overhead valve GM 5.7L engine meets EPA/ Carb Emission Regulations for LSI Engines. All engine functions are controlled by an engine mounted ECM.

The engine features include an electronic ignition, engine blockheater and a vapor fuel system. A critical grade muffler is installed to reduce engine noise levels. Battery rack, cables, and battery tender (charger) are factory installed. A BCI Group 24 650 CCA battery must be purchased separately. Engine cooling is provided by a unit mount radiator. The engine is equipped with a belt driven pusher type fan.

ENGINE SPECIFICATIONS

MAKE	GM
MODEL	5.7L INDUSTRIAL
FUEL TYPE	LP VAPOR OR NATURAL GAS
BASE HORSEPOWER-STANDBY (1800 RPM) (NG)	93 HP
ENGINE CONTROL	ENGINE MOUNTED ECM
FUEL DELIVERY	VAPOR
STEADY STATE GOVERNOR	ELECTRONIC
ENGINE SPEED	1800 RPM
CYLINDERS	8
TOTAL DISPLACEMENT	350 in^3
BORE X STROKE	4.00 X 3.48 in
ASPIRATION	NATURAL
COMBUSTION AIR REQUIREMENT	182.3 CFM
COOLING	LIQUID
RADIATOR CAPACITY	13 QTS
TOTAL COOLING CAPACITY	24.1QTS
HOUSING (GM ADAPTER GROUP)	FLAT FACE
FLYWHEEL (GM ADAPTER GROUP)	300 mm
ROTATION	CCW
LUBE OIL SPEC	SAE 10W-30
OIL & FILTER REPLACEMENT	150 hrs
TOTAL OIL CAPACITY	5.5 QTS
EXHAUST OUTLET SIZE @ MUFFLER	3 in
ELECTRICAL SYSTEM (NEGATIVE GROUND)	12V
ALTERNATOR	70 AMP
NOISE LEVEL (7 METERS)	74 dBA

GENERATOR FEATURES

The generator is a single bearing rotating field generator mounted to the engine flywheel via dual flex drive discs. Three phase generators have 12 lead broad range reconnectable stators; single phase generators are 4 lead. An external voltage regulator maintains proper voltage output, accurate to +/- 1%.

The engine generator combination has the ability to start and operate motors up to 20 hp Code G. Mainline circuit breaker included for generator protection.

OPTIONAL Permanent Magnet Generators are available.

GENERATOR SPECIFICATIONS

RATING	125° C/ 40° C STANDBY
TYPE	4-POLE REVOLVING FIELD
SPEED	1800 RPM
INSULATION SYSTEM	CLASS H
SINGLE PHASE	4 LEAD
THREE PHASE	12 LEAD
STATOR WINDINGS	DOUBLE LAYER CONCENTRIC
PITCH	2/3
WAVEFORM DISTORTION	< 1.5%
TELEPHONE INTERFERENCE	< 2.0%
EFFICIENCY PEAK	91%
COUPLING	FLEXIBLE DISC
BEARINGS (MAINTENANCE FREE)	1
VOLTAGE CONTROL	AS 440
REGULATION	+/- 1%
SINGLE PHASE POWER FACTOR	1.0
THREE PHASE POWER FACTOR	0.8

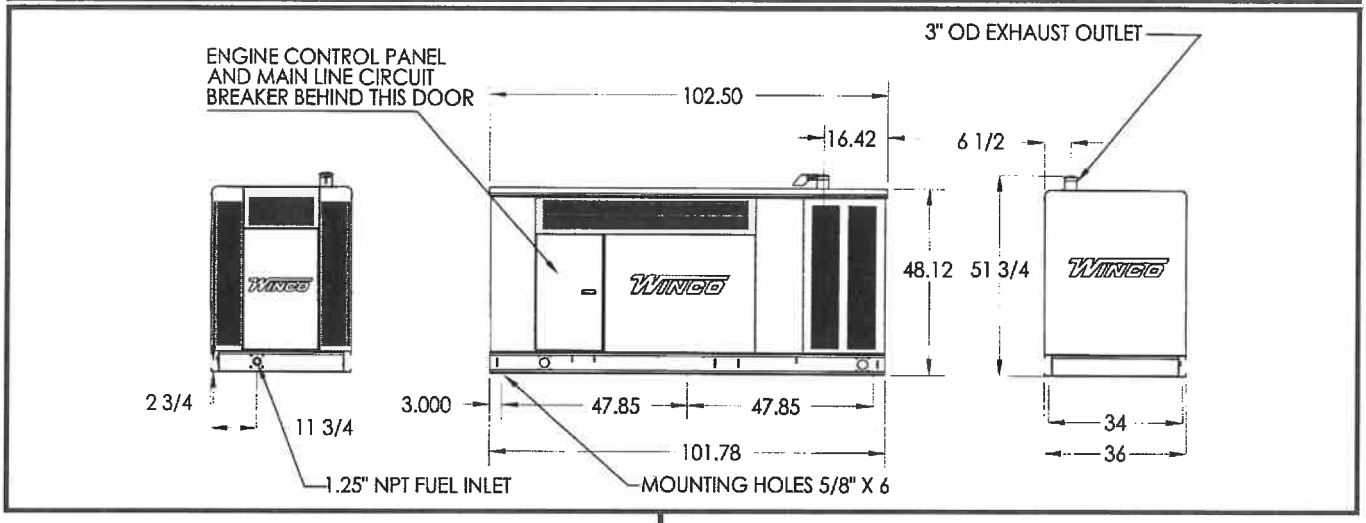
FUEL CONSUMPTION

Fuel Type	Full Load	BTU/hr
L.P. Gas*	9.29 gal/hr	850,964
Natural Gas	799 ft^3/hr	798,455
Inlet Pressure	4-6 oz. / 7-11 in. water column	
Fuel Inlet Size	1-1/4 in.	

* LP liquid withdrawal is available in a Non-ETL configuration

WINCO INC
A Division of DTP Dyna Technology Inc

PSS60



Basler DGC-2020 GenSet Controller Features

The genset controller is mounted to the generator housing, isolating it from harmful vibrations.

General

Basler Electric's Digital Genset Controller (DGC-2020) is a highly advanced integrated genset controller. The DGC-2020 combines rugged construction and microprocessor technology to offer a product that will hold up to almost any environment and is flexible enough to meet your needs. The DGC-2020 provides genset control, metering, protection and programmable logic in a simple, easy to use and cost effective package. Some options may not be activated and require computer interface to activate. (Basler software is shipped with each unit and interconnection cable can be locally purchased.)

- Solid state digital control with LCD display
- Run-Off-Auto function is controlled by three push buttons with indicator lights
- LCD Displays: Engine Oil Pressure, Coolant Temperature, Battery Voltage and Frequency
- Ability to toggle the voltage and amperage on each phase
- Three additional Indicator Lamps notify the user when the system is Not-In-Auto, in Alarm condition, or when the generator is supplying over 2% of its capacity to the loads
- 2 Wire remote start
- SAE J1939 engine ECU communications
- Rugged, fully encapsulated design
- Alarm horn output
- USB communications
- 4 Programmable output contacts

Presented by:

Specifications subject to change without notice.

Generator Protection

- Under voltage
- Over voltage
- Phase imbalance (optional)
- Under frequency
- Over frequency
- Over current (optional)

All generator protection features are programmable as alarms or pre-alarms.

Alarms and Pre-Alarms

- Low oil pressure
- Low coolant level
- Over crank
- Battery Charger Failure
- Engine kW overload
- High coolant temperature
- Over speed
- Engine sender unit failure
- Emergency stop

Digital Engine Control Standard Set Up

• Start Delay	10 seconds
• Cool Down Delay	5 minutes
• Cycle Cranking	3 cycles
• Overcrank Protection	Standard
• Overspeed Protection	Standard
• Low Oil Pressure Protection	Standard
• High Water Temperature Protection	Standard

- UL recognized, CSA certified, CE approved

Housing & Construction

- Sound attenuated enclosure constructed of 16 gauge galvannealed steel with durable powder coat paint finish
- Generator set is factory built and tested to NEMA standards

Options

- NFPA 99 and NFPA 110 compatible Digital Controls available with pre-alarms
- Remote displays with 7 pre-alarms and 8 alarm indicators, switch off auto and unit supplying load lamps
- Vapor fuel strainer
- LPG liquid withdrawal fuel system
- Optional automatic transfer switch sold separately - contact factory for sizes and types available

Limited Warranties

Winco warranties its product from material defects for 1 yr/1000 hours. PSI's limited engine warranty is 3 yrs/3500 hours. Stamford warranties the generator for 2 yrs/1000 hours.

GEC INC.
ELECTRICAL CONTRACTORS & ENGINEERS

To: Ryan Mathews
Superior Pipe Line

Date: August 4, 2014

From: Melisa Baker
GEC, Inc.

Re: 60KW Winco Generator Engine Manufacturing date

This letter is to verify the Engine Manufacturing date for the Following:

60 KW Winco Generator SN: 149146 located at the Superior pipeline compressor Station on Fox Hollow Rd. Bruceton Mills WV, 26525

Winco is the packer of the Generator
Power Solutions is the Manufacture of the GM Engine.

Generator manufactured date:	**May 26, 2011**	**SN: 149146**
GM Engine manufactured date:	**March 29, 2011**	**SN: 5.7L20110**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2011 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT OF 1990

OFFICE OF TRANSPORTATION AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: **Power Solutions, Inc.**
(U.S. Manufacturer or Importer)
Certificate Number: **BPSIB5.702ED-009**

Effective Date: 12/21/2010
Expiration Date: 12/31/2011

Karl J. Simon, Director
Compliance and Innovative Strategies Division

Issue Date: 12/21/2010
Revision Date: N/A

Manufacturer: Power Solutions, Inc.
Engine Family: BPSIB5.702ED
Certificate Number: BPSIB5.702ED-009
Certification Type: Stationary (Part 60)
Fuel : Natural Gas (CNG/LNG)
LPG/Propane
Emission Standards : NMHC + NOx (g/kW-hr) : 13.4
HC + NOx (g/kW-hr) : 13.4
CO (g/kW-hr) : 519
Emergency Use Only : Y

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. section 7547) and 40 CFR Part 60, 1065, 1068, and 60 (stationary only and combined stationary and mobile) and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following nonroad engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and produced in the stated model year.

This certificate of conformity covers only those new nonroad spark-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60. This certificate of conformity does not cover nonroad engines imported prior to the effective date of the certificate.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068.20 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60.

This certificate does not cover large nonroad engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

Certification Summary Information Report

Engine Family	BPSIB5.702ED

Test #4

Test Incorporated by Reference Indicator (This Test Must Have Been Previously Submitted to Verify in a Different Engine Family Data Set)	No		
Test Engine Number	2	**Manufacturer Assigned Test Number**	T1C5A1
Verify Assigned Certification Test Number	BPSIBM0002333	**Corresponding Engine Configuration Number (Engine Model Name, Engine Code)**	null (5000ED, 5000ED)
Test Lab ID	Intertek Carnot Emission Services	**Test Date**	01/11/2009
Engine Hours Reading at Test Start	4	**Emission Sampling Method**	Constant Volume Sampling (CVS)
Test Cycle Used	G2	**Test Engine Maximum Measured Power (kW)**	62.2
Test Engine Speed (RPM) at which Maximum Measured Power Occurs	1800	**Test Engine Maximum Measured Torque (NM)**	330.1
Test Engine Speed (RPM) at which Maximum Measured Torque Occurs	1800	**Certification Test Fuel**	Natural Gas
Test Result - Mobile/Stationary Identifier	Stationary (Part 60)		
Engine Model Rated Power (kW)	65.8		
Certification Test Fuel Justification	--		

Constituent Name	Constituent Units	Certification Test Result (before Deterioration Factor applied)	Calculated Certification Level	Pass/Fail Indicator
NMHC + NOx	g/kW-hr	0.46	6.1	Pass
NOx	g/kW-hr	5.6	--	--
CO2	g/kW-hr	785.48	--	--
CO	g/kW-hr	31.57	31.6	Pass
NMHC	g/kW-hr	0.46	--	--

No data submission for CH4 or N2O Justification --

ATTACHMENT V

Facility-Wide Emission Summary

ATTACHMENT V – FACILITY-WIDE CONTROLLED EMISSIONS SUMMARY SHEET

List all sources of emissions in this table. Use extra pages if necessary.

Emission Point ID#	NO_x		CO		VOC		SO_2		PM_{10}		$PM_{2.5}$		GHG (CO_2e)	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
CE-1	1.87	8.21	1.52	6.65	0.58	2.54	2.1E-03	0.01	0.04	0.16	0.04	0.16	509.79	2,232.88
GE-1	2.05	0.51	4.83	1.21	2.07	0.52	4.8E-04	1.2E-04	0.02	4.0E-03	0.02	4.0E-03	95.55	23.89
RSV-1	---	---	---	---	0.13	0.55	---	---	---	---	---	---	721.26	3,159.11
RBV-1A	0.02	0.09	0.02	0.07	1.1E-03	4.7E-03	1.2E-04	5.1E-04	1.5E-03	0.01	1.5E-03	0.01	23.42	102.60
T01	---	---	---	---	0.05	0.23	---	---	---	---	---	---	0.03	0.15
T02	---	---	---	---	0.05	0.23	---	---	---	---	---	---	0.03	0.15
De minimis storage tanks (T03 – T05)	---	---	---	---	9.1E-05	4.0E-04	---	---	---	---	---	---	---	---
L01	---	---	---	---	0.09	0.02	---	---	---	---	---	---	---	---
Catalytic Heaters	4.9E-04	2.1E-03	4.1E-04	1.8E-03	2.7E-05	1.2E-04	2.9E-06	1.3E-05	3.7E-05	1.6E-04	3.7E-05	1.6E-04	2.8E-04	1.2E-03
Fugitives	---	---	---	---	---	0.66	---	---	---	---	---	---	---	549.89
Haul Roads	---	---	---	---	---	---	---	---	---	0.01	---	1.0E-03	---	---
FACILITY TOTAL	3.94	8.81	6.37	7.93	2.92	4.76	2.7E-03	0.01	0.05	0.18	0.05	0.17	1,350.10	6,068.67
FACILITY TOTAL (Excluding fugitives)	3.94	8.81	6.37	7.93	2.92	4.10	2.7E-03	0.01	0.05	0.17	0.05	0.17	1,350.10	5,518.78

Annual emissions shall be based on 8,760 hours per year of operation for all emission units except emergency generators.
According to 45CSR14 Section 2.43.e, fugitive emissions are not included in the major source determination because it is not listed as one of the source categories in Table 1. Therefore, fugitive emissions shall not be included in the PTE above.

ATTACHMENT V – FACILITY-WIDE HAP CONTROLLED EMISSIONS SUMMARY SHEET

List all sources of emissions in this table. Use extra pages if necessary.

Emission Point ID#	Formaldehyde		Benzene		Toluene		Ethylbenzene		Xylenes		Hexane		Total HAPs	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
CE-1	0.26	1.15	1.6E-03	7.0E-03	1.5E-03	6.5E-03	1.4E-04	6.3E-04	6.7E-04	2.9E-03	4.1E-03	0.02	0.33	1.46
GE-1	0.02	4.2E-03	2.0E-05	5.1E-06	1.1E-05	4.6E-05	1.6E-04	4.0E-05	<0.01	<0.01	<0.01	<0.01	0.03	0.01
RSV-1	---	---	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.13	0.03	0.13
RBV-1A	1.5E-05	6.4E-05	4.1E-07	1.8E-06	6.7E-07	2.9E-06	---	---	---	---	3.5E-04	1.5E-03	3.7E-04	1.6E-03
T01	---	---	4.6E-04	2.0E-03	2.3E-04	1.0E-03	<0.01	<0.01	<0.01	<0.01	3.0E-03	0.01	4.6E-03	0.02
T02	---	---	4.6E-04	2.0E-03	2.3E-04	1.0E-03	<0.01	<0.01	<0.01	<0.01	3.0E-03	0.01	4.6E-03	0.02
De minimis storage tanks (T03 – T05)	---	---	---	---	---	---	---	---	---	---	---	---	9.1E-05	4.0E-04
L01	---	---	---	---	---	---	---	---	---	---	---	---	3.9E-03	1.7E-03
Catalytic Heaters	3.7E-07	1.6E-06	1.0E-08	4.5E-08	1.7E-08	7.3E-08	---	---	---	---	8.8E-06	3.9E-05	9.2E-06	4.0E-05
Fugitives	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Haul Roads	---	---	---	---	---	---	---	---	---	---	---	---	---	---
FACILITY TOTAL	0.28	1.15	2.5E-03	0.01	2.0E-03	0.01	3.0E-04	6.7E-04	6.7E-04	2.9E-03	0.04	0.18	0.40	1.64
FACILITY TOTAL (Excluding fugitives)	0.28	1.15	2.5E-03	0.01	2.0E-03	0.01	3.0E-04	6.7E-04	6.7E-04	2.9E-03	0.04	0.18	0.40	1.64

Annual emissions shall be based on 8,760 hours per year of operation for all emission units except emergency generators.
According to 45CSR14 Section 2.43.e, fugitive emissions are not included in the major source determination because it is not listed as one of the source categories in Table 1. Therefore, fugitive emissions shall not be included in the PTE above.

Class I Legal Advertisement

AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that Superior Appalachian Pipeline, LLC has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a G35D permit for an existing natural gas compressor station (Preston Compressor Station) located off of Fox Hollow Road and 1.85 miles northeast of Clifton Mills, WV and is in Preston County, West Virginia. Site Latitude and Longitude Coordinates are: 39.72069, -79.59528.

The applicant estimates the potential to discharge the following Regulated Air Pollutants will be:

Pollutant	Facility Wide (tpy)	Facility Wide excluding Fugitive Emissions (tpy)
Nitrogen Oxides	8.81	8.81
Carbon Monoxide	7.93	7.93
Particulate Matter-10	0.18	0.17
Particulate Matter-2.5	0.17	0.17
Volatile Organic Compounds	4.76	4.10
Sulfur Dioxide	0.01	0.01
Formaldehyde	1.15	1.15
Benzene	0.01	0.01
Toluene	0.01	0.01
Ethylbenzene	6.7E-04	6.7E-04
Xylenes	2.9E-03	2.9E-03
Hexane	0.18	0.18
Total Hazardous Air Pollutants	1.64	1.64
Carbon Dioxide Equivalents (CO2e)	6,068.67	5,518.78

The facility is currently in operation; this permit application is being submitted per WVDEP's request to clarify source information regarding the facility. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1250, during normal business hours.

Dated this the 15th Day of May, 2017.

By: Superior Appalachian Pipeline, LLC
Jennifer Frazier, Environmental Specialist (Unit Corporation)
PO Box 702500
Tulsa, OK 74170-2500